Infrastructure Needs Survey Report

Based on results from the FY2000 Statewide Infrastructure Needs Survey, this report summarizes Maryland's infrastructure needs (as reported by local governments and State agencies) and assesses the fiscal capacity of local governments to meet those needs.

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EXECUTIVE SUMMARY: 2001 INFRASTRUCTURE NEEDS SURVEY

Purpose

In 1997, the Maryland General Assembly enacted Smart Growth legislation that, in part, directs the Maryland Department of Planning (MDP) to survey local governments and State agencies regarding their self-identified infrastructure needs and fiscal capacity to meet their needs. MDP completed the first survey in 1998; this report is based on responses[1] to the second survey, completed in 2001.

Goal

Infrastructure is a fundamental component of Smart Growth. The goal of this survey is to support statewide Smart Growth efforts by assessing statewide infrastructure needs; monitoring infrastructure needs in light of Smart Growth goals; and identifying funding gaps to ensure the State is equipped to handle projected development within Priority Funding Areas (PFAs) and preserve a high quality of life for all communities. Priority Funding Areas are areas in which the state targets spending on infrastructure. The Priority Funding Areas Act designated municipalities, areas inside the Baltimore and Washington beltways, and certain other areas as PFAs, and local governments can designate additional areas where they want state support for future growth, provided the areas meet certain criteria.

For future surveys to most effectively meet these goals, improvements must be made to the quality of the reported data. Survey results serve as an indicator of need and demonstrate apparent gaps in funding. For a sound analysis, the data must be more precise and comprehensive. With more accurate information, the needs of local governments can be addressed at a regional level. Secondly, accurate information will strengthen efforts to find solutions for the increasing gap between needs and financial resources.

Infrastructure Planning

The self-assessment section of the survey asked governments to answer questions on infrastructure planning in their respective jurisdictions. Results indicate that governments are unable to adequately maintain existing infrastructure and limited in their ability to support planned growth.

- 118 (65%) reported that they **were unable** to adequately maintain infrastructure.
- 96 (53%) reported that they **were unable** to provide adequate infrastructure.
- 120 (66%) reported that their ability to fund infrastructure is a limiting factor in directing new growth to appropriate areas.
- 56 (31%) reported that some capital projects (39%) would have been unnecessary if they had been able to fund timely maintenance and renovation of existing facilities.

There is an immediate need to address the shortcomings of infrastructure planning statewide. In the absence of addressing this need, Smart Growth efforts are jeopardized by inadequate infrastructure and the resulting inability of local governments to direct growth to the appropriate locations within Priority Funding Areas. Local governments' ability to provide MDP with accurate information

[1] Responses are made at the sole discretion of the survey respondent. Individual jurisdiction's or agency's needs are NOT determined by the MDP.

regarding infrastructure needs is related to the quality of their capital improvements programming process. For data to be meaningful, there must be a common understanding of "need" based on similar inventory methods, standard system preservation programs, and the application of accepted life-cycle costing techniques.

Infrastructure Need

Local governments and state agencies reported their identified infrastructure needs.[2]

- Local governments reported needs totaling **$40 billion** (short-term needs totaled $29 billion)
- State agencies reported needs totaling **$21.5 billion** (short-term needs totaled $21 billion)

Needs were divided into short-term budgeted *(needed, or intended for construction, in the next 5 or 6 years, and in a Capital Improvement Program (CIP) or otherwise budgeted)*, short-term unbudgeted *(short-term projects not included in an adopted CIP nor otherwise budgeted)* and long range *(needed, and intended for construction, in the 15 years following the initial short-term projects)*.

Needs were also divided into the reason for the project: rehabilitation/renovation *(projects needed to maintain, repair or replace existing infrastructure)*, existing unmet need *(backlog of new capacity or additional capacity needed to meet the demands of existing residents and businesses)*, growth *(new infrastructure or new capacity needed to meet the demands of new residents and businesses)* and/or other *(projects necessary for other reasons such as public safety, neighborhood request, etc.)*. Projects needed for multiple reasons were allocated a percentage for each reason; for example, 10% of one project could be allocated to rehabilitation, 40% for existing unmet need and 50% for growth. Reason information was not provided for all projects.

Infrastructure Type

For local governments, the infrastructure types with the greatest number of projects and highest cost are: parks and recreation, public libraries, roads and bridges, sanitary sewer, schools, and water supply. For state agencies, the infrastructure types with the greatest number of projects and highest costs are: airports, detention facilities, government buildings, health and human services, ports, public transportation, roads and bridges, and schools. These infrastructure types differ from local governments' needs by the addition of detention facilities, health and human services, and ports. This is because the State plays a major role in the funding of those infrastructure types.

The adequate provision of these infrastructure types directly relates to the success of Maryland's Smart Growth and Neighborhood Conservation initiatives. Smart neighborhoods (compact, mixed-use development), infill, and redevelopment require efficient use of infrastructure with convenient gathering places and

[2] MDP did not define "need" but asked for jurisdictions to report all capital infrastructure projects and system preservation programs.

recreation spaces, libraries, schools, well-connected and pedestrian oriented streets, and additional infrastructure capacity to support planned growth.

Fiscal Capacity

In recent years, county governments spent an annual average of $1 billion ($190 per capita) for capital projects (FY 1997-1999). Survey results show that statewide over the next six years, local governments have an average annual need **four times** recent annual capital spending by counties. Maryland's total capital budget for FY2000 was $2 billion ($430 per capita) indicating that state agencies have an average annual need **one and one half** times recent annual capital spending.

With an average annual need four times recent annual capital spending by counties there is evident demand for additional resources to facilitate the provision of adequate infrastructure. By not addressing this gap, deferred needs may accumulate, creating an even larger gap between local governments' fiscal constraints and need. Maryland is a rapidly growing state, growing faster, in fact, than the national average between the 1990 Census and 2000 Census. Maryland is projected to grow by close to half a million people during the next ten years, which, if needs are not met, will further accelerate the demand for increased infrastructure funding.

Adequate and well-maintained infrastructure is inextricably linked to the success of Smart Growth. Failure to address issues directly relating to infrastructure could completely undermine the Smart Growth investments made to date. Communities must have adequate infrastructure in order to capitalize on past investments, and to direct growth where it is desired. Without adequate infrastructure Maryland will delay and/or prohibit development in designated Priority Funding Areas, adding to the development pressure in rural areas. This will affect Marylanders' overall quality of life and the state's economic competitiveness.

Chart 1. Summary of Findings

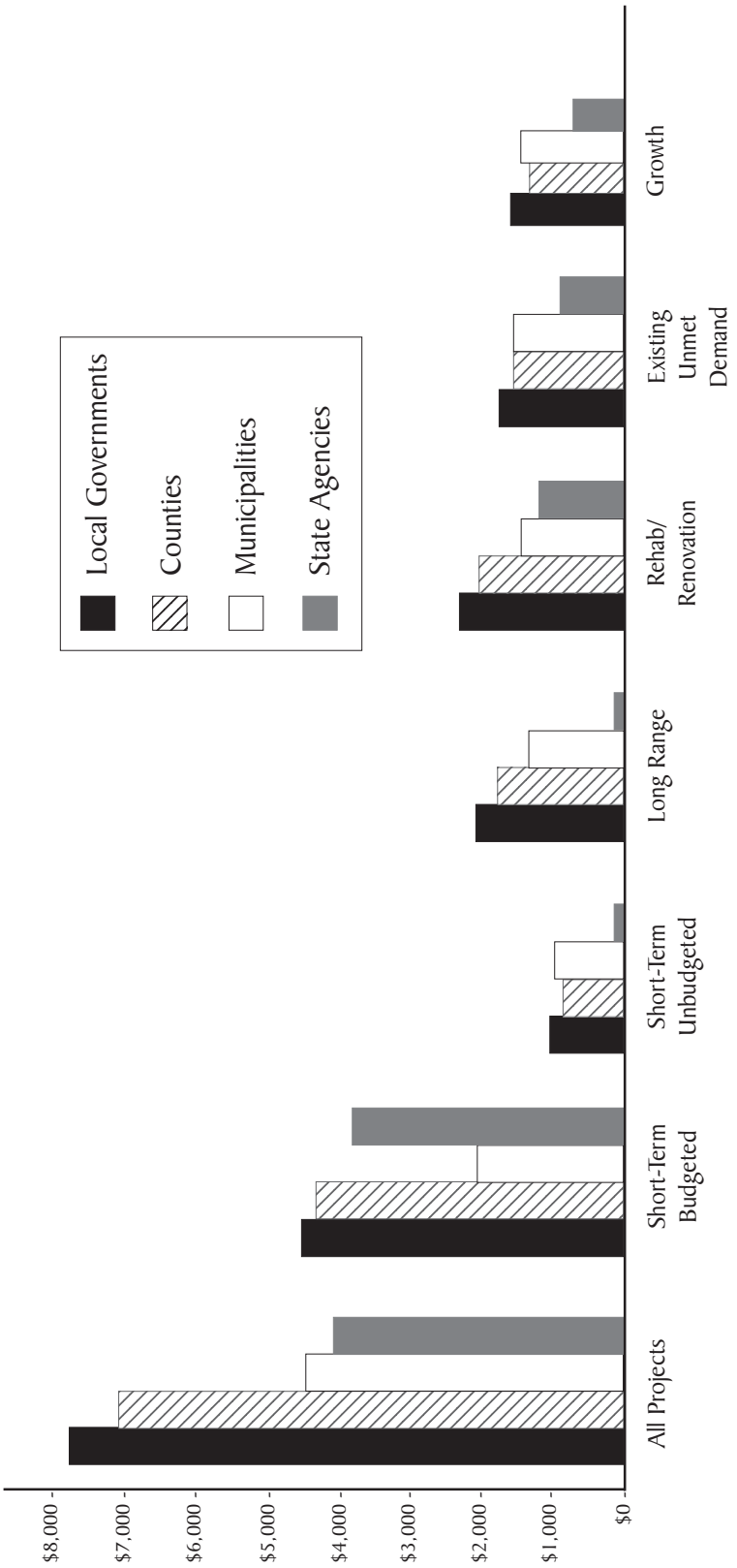


Table 1. Summary of Findings

Local Governments (Counties and Municipalities)		
➢ **9,472 All Reported Projects**	**$40 billion**	**($7,600 per capita)[3]**
➢ 5,381 Short-term Budgeted Projects	$ 24 billion	($4,500 per capita)
➢ 2,140 Short-term Unbudgeted Projects	$ 5 billion	($1,000 per capita)
➢ 1,951 Long Range Projects	$ 10 billion	($2,000 per capita)
Reason[4] for Project		
➢ 3,725 Rehab/Renovation	$ 12 billion	($2,290 per capita)
➢ 3,356 Existing Unmet Demand	$ 9 billion	($1,680 per capita)
➢ 2,718 Growth	$ 8 billion	($1,580 per capita)
Counties (including Baltimore City)		
➢ **6,325 All Reported Projects**	**$36 billion**	**($6,930 per capita)**
➢ 4,024 Short-term Budgeted Projects	$22 billion	($4,280 per capita)
➢ 1,062 Short-term Unbudgeted Projects	$ 4 billion	($ 870 per capita)
➢ 1,239 Long Range Projects	$ 9 billion	($1,780 per capita)
Reason for Project		
➢ 2,067 Rehab/Renovation	$11 billion	($2,070 per capita)
➢ 2,123 Existing Unmet Demand	$ 8 billion	($1,530 per capita)
➢ 1,704 Growth	$ 7 billion	($1,370 per capita)
Municipalities		
➢ **3,145 All Reported Projects**	**$3.3 billion**	**($4,420 per capita)**
➢ 1,357 Short-term Budgeted Projects	$1.6 billion	($2,080 per capita)
➢ 1,077 Short-term Unbudgeted Projects	$0.7 billion	($ 990 per capita)
➢ 711 Long Range Projects	$ 1 billion	($1,350 per capita)
Reason for Project		
➢ 1,495 Rehab/Renovation	$ 1 billion	($1,490 per capita)
➢ 1,233 Existing Unmet Demand	$0.8 billion	($1,530 per capita)
➢ 1,014 Growth	$ 1 billion	($1,460 per capita)
State Agencies		
➢ **1,874 All Reported Projects**	**$21.5 billion**	**($4,060 per capita)**
➢ 1,007 Short-term Budgeted Projects	$20 billion	($3,780 per capita)
➢ 590 Short-term Unbudgeted Projects	$ 1 billion	($ 200 per capita)
➢ 280 Long Range Projects	$ 0.4 billion	($ 80 per capita)
Reason for Project		
➢ 860 Rehab/Renovation	$ 6 billion	($1,160 per capita)
➢ 382 Existing Unmet Demand	$ 5 billion	($ 900 per capita)
➢ 250 Growth	$ 4 billion	($ 760 per capita)

[3] Based on Population for the State of Maryland in 1999 of 5,296,486
[4] Reason information was not provided for all projects.

RECOMMENDATIONS

The infrastructure survey is a powerful tool to guide Smart Growth efforts across the state. It is a collection of the infrastructure needs of all jurisdictions and state agencies. Maryland is one of a few states to collect this data. The Maryland Department of Planning seeks to improve the accuracy of the reported data to provide more meaningful analysis. Some mechanisms are already in place which could assist this effort if enforced and enhanced, including increased rigor in the completion of required plans for certain infrastructure types and standardization of the capital improvements program (CIP). MDP aspires to determine a more accurate assessment of infrastructure needs and funding gaps to effectively address this impediment to Smart Growth at a regional level.

Since 1984, the Maryland Department of Planning has published several documents addressing inadequate infrastructure across the State. The situation appears to be growing worse. The consequences to Maryland for not addressing the provision of adequate infrastructure are severe. Maryland can expect infrastructure failures that will put citizens' health and the environment at risk, compromise communities' quality of life and jeopardize the tremendous Smart Growth investments for which Maryland has received national recognition. Infrastructure is the backbone of Smart Growth and if infrastructure facilities are not equipped to support development, then Maryland will not be able to take advantage of the far-sighted policies enacted under the Smart Growth Act. Recommendations based on the findings from this *2001 Infrastructure Needs Survey* are:

- Improve infrastructure planning;
- Identify infrastructure funding; and
- Increase effectiveness of the *Infrastructure Needs Survey*.

Infrastructure Planning

Maryland is fortunate to have planning mechanisms in place that can provide the basis for an accurate assessment of infrastructure needs. Every county and municipality is required to prepare and update a comprehensive plan every six years. Comprehensive plans address the provision of infrastructure facilities. In addition, State law requires every county and Baltimore City to prepare and update several functional plans which address specific infrastructure needs: water and sewer; solid waste; land preservation and recreation; and public school construction. To improve accuracy in the data provided to the survey, the following actions are recommended:

- Standardize content requirements for Capital Improvements Programs;
- Require all jurisdictions to complete CIPs;
- Provide technical assistance to local governments on capital improvements programming and budgeting;
- Review all comprehensive and functional planning programs to identify ways they can support more accurate needs assessment; and
- Research innovative infrastructure planning techniques and financing methods that encourage a strong connection between physical and fiscal planning, and share best practices with local governments.

Infrastructure Funding

A precise funding figure to cover the gap between what local governments are able to pay and the infrastructure needed is unknown at this point. However, local governments clearly need some assistance to meet their identified infrastructure needs. Many of these needs are well documented and immediate. While an effort is being made to improve the precision with which an exact dollar amount needed is determined, and other actions, such as use of more rigorous planning techniques, are being taken to decrease necessary funding, the following actions are strongly recommended:

- Identify additional infrastructure funding sources for local governments;
- Make existing infrastructure funding flexible and accessible;
- Identify innovative infrastructure financing techniques; and
- Provide technical assistance to local governments on setting effective rate structures and infrastructure financing methods.

Infrastructure Needs Survey Tool

In addition to addressing the accuracy of data provided to the survey, the following items address changes to the survey tool that will facilitate the data collection process and improve accuracy and confidence in the survey analysis:

- Precisely define terms used in the infrastructure survey as vaguely defined terms may affect consistency of results;
- Limit survey to local governments;
- Require CIP to accompany survey;
- Require funding information for all short-term budget projects; and
- Update the survey once every three years.

By implementing these recommendations, the State of Maryland and local governments will be better equipped to direct new development, infill and redevelopment to planned areas and maintain a high quality of life for all Marylanders. Improved infrastructure planning and maintenance programs can greatly reduce overall infrastructure costs and allow for timely budgeting procedures so that financial resources are available when needed. Lower infrastructure costs and well-documented, reliable infrastructure needs identification will ease efforts to garner funding necessary to meet those needs. It will also help to inform initiatives to create new sources of funding such as a dedicated State Infrastructure Fund.

CHAPTER 1:
2001 INFRASTRUCTURE SURVEY BACKGROUND

In 1997, the Maryland General Assembly enacted the Smart Growth and Neighborhood Conservation Act. The Act is a blueprint for managing growth in existing communities and undeveloped areas. It directs State resources to revitalize older developed areas, preserve Maryland's valuable resource and open space lands, and discourage sprawl development. Priority Funding Areas, one of the most important components of Smart Growth, are locally certified areas where growth is planned and infrastructure exists or is programmed for construction. The Act requires the Maryland Department of Planning to survey local governments and state agencies to report their infrastructure needs[5] and assess their financial capacity to meet these needs. This is the second survey conducted by the Department of Planning. Results from the first survey, completed in 1998, are available at **http://www.mdp.state.md.us/infrastructuresurvey.**

The 1998 infrastructure survey revealed that budget needs were more than one and one-half times the average annual level of capital spending by counties. According to the 2001 survey, that figure increased to **four times** the average level of spending. The total needs reported by counties and municipalities increased from $25.9 billion in 1998 to $40 billion in 2001.[6] Likewise, the annual short-term budgeted need increased from $1.9 billion in 1998 to $4 billion in 2001. To meet the 2001 short term budgeted needs, each person in Maryland would need to contribute $12 a day for a year—the equivalent of each Marylander buying a crab cake, a cold beer and ice cream every single day for a year.

Maryland's statewide infrastructure survey is a direct reflection of the State's commitment to Smart Growth and Neighborhood Conservation. A large part of implementing Smart Growth is making prudent choices concerning Maryland's resources. In order to manage its resources, the General Assembly needs sound information from which to make decisions and allocate funding. Likewise, local governments need to have rigorous capital improvements programs to know what infrastructure they have, what infrastructure they will need, and what it will cost to build and maintain that infrastructure. Having consistent, precise information will allow MDP to complete an even more accurate analysis of statewide infrastructure needs.

The consequences of inadequate infrastructure are severe. Infrastructure failures put citizens' health and the environment at risk, compromise communities' quality of life and jeopardize investments made by the State of Maryland and local jurisdictions. Infrastructure is the backbone of Smart Growth and if infrastructure facilities are not equipped to support development, then Maryland will not be able to take advantage of the far-sighted policies enacted under the Smart Growth Act. Adequate infrastructure provision is a serious issue that must be addressed today.

[5] Reader must use discretion while interpreting results as they are based solely on the self reported needs of local governments and State agencies.

[6] The online survey may have contributed to an increase in the reporting of needs as most jurisdictions found it easier to use. This may have helped jurisdictions include a more complete list of their needs. The online version also contained projects from 1998 reducing the data entry required and ensuring a more complete collection of infrastructure needs. Additionally, MDP's regional planners worked closely with smaller jurisdictions, which contributed to a more complete number of reported projects across the state.

PURPOSE OF INFRASTRUCTURE SURVEY

The purpose of the survey is to gather information and report on infrastructure needs and local governments' financial capacity to meet their needs. The infrastructure survey is a method to assess what capital projects local governments and state agencies are planning in the short and long term. The survey asks what is being planned, funding sources for projects, and the reason and origin of each project. Analysis of the information provided indicates whether or not municipalities, counties and State agencies have the means to fund their identified infrastructure needs. Survey information informs citizens, legislators and government agencies about types of projects and funding levels. Data collected for the survey is also used to inform other State planning efforts such as the Maryland Land Preservation and Recreation Plan, the Governors Task Force on Upgrading Sewerage Systems, and the Chesapeake Bay 2000 agreement.

The survey is an attempt to examine the need for infrastructure at a regional level. Inadequate infrastructure in one jurisdiction will affect development patterns in other areas. For example, if one jurisdiction has a moratorium on development within its central business district to address inadequate infrastructure, then development that would normally occur there may occur elsewhere, perhaps in outlying areas.

GOAL OF INFRASTRUCTURE SURVEY

Without adequate infrastructure, Maryland will find it difficult to accommodate growth within PFAs. Properly located, adequate and well-maintained infrastructure in designated growth areas is essential to the success of Smart Growth. One goal of the survey is to bring attention to the status of infrastructure and its important role in the progress and success of Smart Growth. Another goal of the survey is to highlight the financial investment needed to provide and maintain infrastructure. This ensures that Maryland communities remain strong and desirable places to live, work, and play- a key factor in helping Maryland compete in the local and global economy.

NEEDS

MDP asked local governments to report all short term and long range capital infrastructure projects and system preservation programs. Capital infrastructure projects are defined as public facilities or amenities that have a useful life of at least 10 years or involve major renovation of existing facilities. System preservation programs provide for major improvements to or rehabilitation of existing infrastructure. MDP also encouraged counties and municipalities to coordinate survey responses with each other so that their reported needs were comprehensive and reflected the cumulative professional judgment and knowledge of all local officials, while preventing duplication of the identified needs.

Needs are self-reported by the jurisdictions and State agencies. Respondents give their needs on an "honor" system, as no other documentation is required to demonstrate the need or qualify the project cost.[7]

Infrastructure projects may be needed for various reasons

The survey assesses the reason for an infrastructure need using three categories: growth, rehabilitation/renovation, and unmet existing demand. For survey respondents to determine in which category a project belongs, they must be able to discern what infrastructure will be needed to accommodate growth and keep track of needs for rehabilitation versus existing unmet demand. In this regard, the survey assumes a level of sophistication that all jurisdictions may not have. Because it is difficult to distinguish between capital investments for renovating and upgrading existing infrastructure from investments for growth, the survey allows for a percentage of a project to be allocated to growth, rehabilitation/renovation, and existing unmet need. Reason information was not provided for all projects.

Ways "needs" arise

Understanding the complexity involved in determining a community's infrastructure needs requires identifying the variety of reasons behind how and why "needs" arise. Community infrastructure needs are dependent on: the initial quality of facilities constructed, quality of maintenance, population and employment growth, the physical nature of development, technology changes, standards of acceptability, community expectations, and Federal and State regulations. A community's needs also depend on their understanding of "need," which is highly variable among communities.

[7] The reader must use discretion while interpreting the self-reported figures presented in this document.

CHAPTER 2:
SELF ASSESSMENT RESULTS

Section One of the survey contained general questions to assess infrastructure planning in each jurisdiction. There were seventeen questions (see Appendix G, page 91, Answers to Self Assessment Section). Questions asked in the 1998 survey were included in the 2001 survey, with the answers from the 1998 self-assessment appearing to the side of the question in italics as a reminder of what was previously reported. Two of the questions concerned local governments' ability to provide and maintain adequate infrastructure for existing residents, and a third question asked local governments if their ability to fund infrastructure is a limiting factor in their ability to accommodate growth in appropriate areas. The answers[8] to those questions are as follows:

Have you been able to adequately maintain your jurisdiction's existing infrastructure?

- In 1998, 86 (55%) local governments reported that they **were able** to adequately maintain infrastructure.
- In 2001, 60 (33%) local governments reported that they **were able** to adequately maintain infrastructure.

Poorly maintained infrastructure has a negative effect on capacity for economic development and quality of life.

Have you been able to provide adequate infrastructure for existing residents and businesses?

- In 1998, 101 (65%) local governments reported that they **were able** to provide adequate infrastructure.
- In 2001, 80 (44%) local governments reported that they **were able** to provide adequate infrastructure.

The inability to provide adequate infrastructure is evidenced across the state by inadequate recreational facilities, closing of public libraries and sanitary sewer overflows.

Is your ability to fund infrastructure a limiting factor in your ability to direct new growth to appropriate areas?

- In 1998, 100 (64%) local governments reported that their ability to fund infrastructure was a limiting factor in directing new growth to appropriate areas.
- In 2001, 120 (66%) local governments reported that their ability to fund infrastructure is a limiting factor in directing new growth to appropriate areas.

The success of Smart Growth policies depends in part on being able to direct growth to appropriate areas.

[8] In 1998, 156 jurisdictions responded to this section of the survey. In 2001, 181 responded.

Local governments reported overwhelmingly that they have **not been able** to adequately maintain their existing infrastructure. At the same time, local governments are also **limited in their ability to direct growth** to appropriate areas. Inadequate infrastructure may be one of many factors inhibiting growth inside areas planned for growth. Additionally, if needs are deferred and the cost of repairing infrastructure increases due to inflation and/or the need for more extensive repairs, the financial burden of local improvements may be unequally borne by residents who are left behind in older communities. The *Seattle Times* reported that when dealing with the challenge of paying for growth, which is largely connected to accommodating new growth, "longer term residents feel they are constantly paying for infrastructure upgrades with many improvements required by an influx of new residents." (*Seattle Times*, Jan. 3, 2002) Conversely, the residents who remain in communities with no growth are often low-income residents and retirees, neither of whom can afford to pay more for improved or new infrastructure systems. These communities will most likely not be equipped to handle new growth (see Table 2. Median Household Income, Population Growth and Per Capita Infrastructure Need by Jurisdiction).

Although more counties (88% including Baltimore City) reported in 2001 that they have Capital Improvement Programs than in 1998 (71%), many municipalities still do not have CIPs (48%). Many jurisdictions reported that they do not have system preservation programs that receive an annual level of funding (51%). Additionally, very few jurisdictions (20%) use tools to predict the timing and/or cost of rehabilitation projects. Consequently, 31% of jurisdictions reported that some of their capital projects would have been unnecessary if they had been able to adequately fund timely maintenance and renovation of existing facilities—on average, 39% of their capital projects would not have been necessary. Therefore, not only are jurisdictions unable to adequately maintain their infrastructure, but it eventually results in the need for capital projects that would otherwise have been unnecessary. This raises questions over why jurisdictions are unable to fund timely maintenance and renovation. Is it that the needs are unknown until a crisis visually erupts such as a broken water main or a collapsed bridge? This is possible, considering that 60 jurisdictions reported that they do not have inventories of existing infrastructure. Or, needs may be known but funds are either insufficient or allocated elsewhere. It may also be attributed to a division in budgeting processes between the capital and operating budgets whereby capital facilities maintenance could be included in either depending on the jurisdiction.[9]

Since the 1998 survey, it has apparently become more difficult for local jurisdictions to provide and maintain infrastructure, and to direct growth to planned growth areas (see Appendix, Page 91, G, Answers to Self-Assessment). Even in 1998, 100 jurisdictions reported that they were limited in their ability to accommodate growth due to inadequate funding for infrastructure. Although the majority of jurisdictions reported in 1998 that they were able to provide adequate infrastructure, there was still a $4.3 billion gap between reported needs and capital spending for budgeted projects over a six year time period. Needs identified as Short-term Budgeted were, on an average annual basis, **more than one and one-half times** as high as average capital spending by counties.

[9] This survey only asked for capital budget items.

Table 2. Median Household Income, Population Growth, and Per Capita Infrastructure Needs

County	1999 Med. Income	1994 Population	1999 Population	Change	% Change	FY2000 STB Annual Need Per Capita	1997-1999 Avergae Capital Expenditure Per Capita	GAP Per Capita
Allegany	$28,900	73,866	74,930	1,064	1.44%	$423	$151	$272
Anne Arundel	$60,700	456,171	489,656	33,485	7.34%	$288	$234	$54
Baltimore City	$32,300	703,057	651,154	-51,903	-7.38%	$243	$309	-$66
Baltimore Co.	$52,200	711,783	754,292	42,509	5.97%	$660	$208	$452
Calvert	$64,000	62,179	74,563	12,384	19.92%	$7,694	$186	$7,508
Caroline	$37,300	28,720	29,772	1,052	3.66%	$26	$149	-$122
Carroll	$56,900	136,443	150,897	14,454	10.59%	$258	$256	$2
Cecil	$48,400	77,037	85,951	8,914	11.57%	$275	$133	$142
Charles	$62,400	109,295	120,546	11,251	10.29%	$334	$134	$200
Dorchester	$33,500	30,424	30,674	250	0.82%	$139	$64	$75
Frederick	$55,600	171,274	195,277	24,003	14.01%	$787	$139	$648
Garrett	$30,500	29,372	29,846	474	1.61%	$909	$11	$898
Harford	$56,000	201,985	218,590	16,605	8.22%	$210	$182	$28
Howard	$73,000	212,976	247,842	34,866	16.37%	$665	$256	$409
Kent	$40,400	18,687	19,197	510	2.73%	$124	$115	$9
Montgomery	$72,700	802,721	873,341	70,620	8.80%	$1,040	$202	$838
Prince George's	$57,900	764,053	801,515	37,462	4.90%	$215	$79	$136
Queen Anne's	$52,700	36,070	40,563	4,493	12.46%	$940	$365	$575
St. Mary's	$49,900	80,323	86,211	5,888	7.33%	$720	$240	$481
Somerset	$31,400	23,727	24,747	1,020	4.30%	$59	$93	-$34
Talbot	$42,800	32,015	33,812	1,797	5.61%	$137	$112	$25
Washington	$39,800	126,599	131,923	5,324	4.21%	$4,868	$113	$4,755
Wicomico	$38,300	78,473	84,644	6,171	7.86%	$67	$140	-$73
Worcester	$37,100	39,015	46,543	7,528	19.30%	$812	$118	$694

It is evident that local jurisdictions continually struggle to meet the growing demands for well-maintained and adequate infrastructure. Theoretically, having a Capital Improvements Program means that a jurisdiction is budgeting for needed capital projects and completing projects according to an agreed upon schedule. However, the large gap between needs and expenditures indicates a large disconnect between having a CIP and having the ability to provide and maintain infrastructure facilities. Local governments may be constrained by funding levels, may not be budgeting for the maintenance of their infrastructure, or may be building new infrastructure at the expense maintaining existing facilities. Whatever the reason, the data indicates that jurisdictions will have trouble capitalizing on infrastructure investments if they are unable to properly maintain their assets. This could have implications for directing growth to appropriate areas and for maintaining the quality of life in communities. In the long run, it could also mean higher user fees or taxes for existing residents or increased competition for State and Federal support.

CHAPTER 3:
INFRASTRUCTURE NEEDS RESULTS

The survey asked for information on capital expenditures for the following infrastructure types:

- Airports
- Cultural Facilities
- Dams
- Economic Development
- Environmental Mitigation
- Fire Facilities
- Government Buildings
- Health and Human Services
- Housing
- Judicial Courts
- Open Space
- Parking
- Parks and Recreation Police Facilities
- Ports
- Public Libraries
- Public Transportation
- Rail
- Roads And Bridges
- Sanitary Sewerage
- Shore Erosion Control
- Sidewalks
- Solid Waste Disposal
- Stormwater and Drainage
- Street Lights and Streetscaping
- Telecommunications
- Water Supply

Local and state governments typically share the cost of capital projects and the federal government may provide partial funding in the form of grants and/or loans. Likewise, municipal and county governments may also share the capital costs of those projects from which both jurisdictions benefit. To prevent double counting, MDP asked that jurisdictions only report those infrastructure needs that are located in their jurisdiction and to which they are contributing any level of funding. Projects implemented and funded by a State agency without financial contributions from local governments were claimed by State agencies.

A. LOCAL GOVERNMENT

In this report the term local government refers to the combined results of all municipalities and counties. The results in the following sections will be presented by number of projects, project costs, budget schedule, and reason for the project.

Table 3. Summary of Findings:

➢ 9,472 Reported Projects	**$40 billion ($7,600 per capita)[10]**
➢ 5,381 Short-term Budgeted Projects	$24 billion ($4,500 per capita)
➢ 2,140 Short-term Unbudgeted Projects	$ 5 billion ($1,000 per capita)
➢ 1,951 Long Range Projects	$10 billion ($2,000 per capita)
Reason for Project	
➢ 3,725 Rehab/Renovation	$12 billion ($2,290 per capita)
➢ 3,356 Existing Unmet Demand	$ 9 billion ($1,680 per capita)
➢ 2,718 Growth	$ 8 billion ($1,580 per capita)

[10] Based on Population for the State of Maryland in 1999 of 5,296,486

PROJECTS AND COSTS

Local governments reported **9,472** infrastructure projects totaling **$40 billion** (**$7,600 per capita**).

Table 4. Local Government Need

Infrastructure Type	Number of Projects	% of all Projects	Total Cost	% of all Project Costs	Cost Per Capita
Roads and Bridges	2,100	22%	$11,217,875,000	28%	$2,100
Parks and Recreation	1,300	14%	$ 1,806,314,000	5%	$ 340
Schools	1,200	13%	$ 8,619,268,000	21%	$1,600
Sanitary Sewer	850	9%	$ 5,283,475,000	13%	$1,000
Water Supply	850	9%	$2,414,405,000	6%	$450
Public Libraries	180	2%	$2,329,016,000	6%	$440
Total	6,500	69%	$31,670,353,000	79%	$5,980
All Other Types	**2,900**	**31%**	**$ 8,458,847,000**	**21%**	**$1,600**
TOTAL	**9,500**		**$40,129,200,000**		**$7,600**

INFRASTRUCTURE TYPES

The infrastructure types consisting of the most number of projects and those with the highest reported costs, listed alphabetically, are;

- Parks and Recreation
- Public Libraries
- Roads and Bridges
- Sanitary Sewer
- Schools
- Water Supply

These infrastructure types are the fundamental building blocks of most communities. Without these infrastructure types functioning properly and without additional capacity for growth, communities will be hard pressed to meet the most basic needs of residents and businesses. These six infrastructure types are closely linked to one another because the failing conditions of one could lead to failures and/or decreased capacity of the other infrastructure types. For example, impaired water bodies pose public health risks and affect the public's enjoyment of recreation space that contains contaminated waterways. Additionally, building

schools far from existing residential development may require new roads and bridges. Alternatively, congested roads and lack of public transportation in developed areas may induce households to move to less congested areas where households with children will create a demand for new schools. Failing conditions can also diminish perceived residential property values, creating public and private sector disinvestments. It is therefore necessary to have holistic infrastructure programs that take this connectivity into account.

BUDGET SCHEDULE

Counties and municipalities were asked to report on the budget schedule for each project:

- Short Term Budgeted (STB) projects are those that are needed, or intended for construction, in the next 5 or 6 years, and are in a Capital Improvement Program or otherwise budgeted.
- Short Term Unbudgeted (STU) projects are those that are needed, and intended for construction, in the next 5 or 6 years. STU projects are not included in an adopted CIP or otherwise budgeted.
- Long Range (LR) projects are those that are needed and intended for construction in the 15 years following the initial short-term projects. LR projects include infrastructure necessary to implement the adopted comprehensive plan.

Detailed location and cost information is frequently not available for LR projects and this was reflected in the level of detail reported for those projects in the survey. Almost 13% of the LR projects reported did not have cost information.

Table 5. Local Government Budget Type

Budget Type	# of Projects	% of Total Projects	Cost	% of Total Project Cost	Per Capita Cost	% Projects With No Cost Info.
STB	5,380	57%	$24,268,896,000	61%	$4,580	7%
STU	2,140	23%	$5,372,139,000	13%	$1,010	11%
LR	1,950	20%	$10,488,165,000	26%	$1,980	13%
Total	9,470	100%	$40,129,200,000	100%	$7,580	9%

The high number of projects without cost estimates (9%) indicates that the reported costs are significantly understated. *An additional nine percent of the current total would increase the cost by* ***over three and half billion dollars****.* Long-range projects comprise only 20% of the total, indicating underestimation of need due to possible incomplete reporting for long-range projects. Actual infrastructure needs and costs are probably substantially greater than reported.

Short-term Budgeted Projects

Counties and municipalities reported 5,381 short-term budgeted needs totaling **$24.3 billion ($4,580 per capita)**. The five infrastructure types for which counties and municipalities reported the highest short term budgeted costs were roads and bridges, schools, sanitary sewer, public libraries, and economic development.[11] Local governments have more information available for projects in the STB category, particularly their budget needs for FY2000 and FY2001.

Table 6. Local Government STB Projects by Infrastructure Type

INFRASTRUCTURE TYPE	# OF STB PROJECTS	TOTAL STB COST	STB COST PER CAPITA	% OF ALL STB COSTS
Roads and Bridges	1,128	$5,527,393,000	$1,043	23%
Schools	632	$4,797,520,000	$906	20%
Sanitary Sewer	488	$3,929,643,000	$742	16%
Public Libraries	94	$2,171,386,000	$410	9%
Economic Development	148	$1,534,015,000	$290	6%
Total	2,490	$17,959,957,000	$3,390	74%
All Other Types	2,891	$6,308,940,000	$1,191	16%
TOTAL	5,381	$24,268,896,000	$4,582	100%

One reason for these infrastructure types having the highest reported costs may be that they are inextricably tied to the health and wealth of communities. Local governments are planning for and have more knowledge of needs related to these basic infrastructure types. These are also most of the infrastructure types for which the State has funding programs with local planning prerequisites (see Appendix F, Page 88, Infrastructure Planning in Maryland).

[11] Economic Development will not be included as an infrastructure type in subsequent surveys as it pertains more to the reason for a project rather than a physical infrastructure type in its own right.

In setting infrastructure funding priorities, it is necessary to look at needs comprehensively, including short-term and long-range needs for all types of infrastructure. This will help secure funding in a timely manner and ensure that funds are available when it becomes time to implement long-range projects. Maryland would be remiss to only focus on short-term projects and ignore the looming costs associated with projects needed in the next seven to ten years. For example, most of the costs for public libraries fell in the short-term budgeted category, with relatively few unbudgeted or long-range needs. Water supply and the parks and recreation category had much higher long-range needs than did public libraries. The overall cost for water supply was higher than that for public libraries.

REASON FOR PROJECT

Counties and municipalities reported the percentage of a project that was needed for rehabilitation/renovation, existing unmet demand, growth and/or other (jurisdictions were provided with space to explain the "other" reason category). Local jurisdictions were not required to complete this field in the survey. Consequently, 329 (3.5%) projects did not include reason information.

Definitions for each category are:

- **Rehabilitation/Renovation** - Major maintenance and repair projects of existing facilities.
- **Existing Unmet** - Provision of new capacity or additional capacity to meet the infrastructure needs of existing residents and businesses.
- **Growth** - Provision of new infrastructure or new capacity which is necessary to meet needs generated by new residents and jobs in the jurisdiction.
- **Other-**Jurisductions provided explanation for projects in this category.

37% of the projects were needed for **rehabilitation/renovation**, with an associated cost of $12.1 billion. **Existing unmet demand** was the second most common reason, with 3,356 projects (33%) and an associated cost of $8.9 billion. While the cost of projects required for **growth**—$8.3 billion—was similar to the cost of projects required for existing unmet demand, this category accounted for a fewer number of projects, 2,718, (27%). The **other** reason category accounted for only 326 projects (3%) and had an associated cost of $651million. Local jurisdictions offered a variety of explanations for projects that fell in the "other" category: expectations of stricter standards; development of full design capacity; fulfillment of mandate; permit compliance; regulations (ADA, safety); support for other projects; and water quality protection.

Table 7. Local Government Reason for All Projects

Reason Category	# Projects	% Total Projects	Cost of Projects	%Total Cost	Cost Per Capita
Rehabilition/ Renovation	3,730	37%	$12,100,757,000	40%	$2,280
Existing Unmet Demand	3,360	33%	$8,915,030,000	30%	$1,680
Growth	2,720	27%	$8,375,277,000	28%	$1,580

Reason for Short-term Budget Type

The majority of short-term budgeted projects are needed for rehabilitation/ renovation. The cost for rehabilitation/renovation projects is significantly higher than that for growth. The project costs for existing unmet needs are also higher than those for growth related projects. This could indicate that failing facilities, perhaps due to deferred routine maintenance, are resulting in urgent needs.

Table 8. Local Government Reason for STB Projects

Reason for STB Project	# Projects	% Total STB Projects	Cost	% Total STB cost
Growth	1,167	23%	$3,894,493,000	22%
Rehabilitation/ Renovation	**2,121**	**41%**	**$8,673,878,000**	**49%**
Existing Unmet	1,668	32%	$4,582,552,000	26%

Reason and Infrastructure Type for Short-Term Budgeted Projects

For Short-term Budgeted projects:

- Schools had the highest costs needed for growth;
- Roads and bridges had the highest costs for rehabilitation/renovation; and
- Public libraries had the highest costs for unmet existing need.

It is unclear whether the school projects needed for growth are for new buildings or additions but according to the Capital School Construction CIP, it can be assumed that these projects are for increased capacity of existing facilities.

Interestingly, local governments reported a short term budgeted need for parking facilities of $302 million which is higher than the short term budgeted need for community colleges, police facilities, public transportation, housing, open space and nineteen other infrastructure types. (See Table 10. Local Government Short-term Budgeted by Infrastructure Type). Transit-oriented, mixed-use development,

designed well with sound pedestrian and bike access, is an important component of Smart Growth development. Parking requirements can inhibit this type of development, because vast surface parking lots are contrary to the goals of pedestrian friendly communities, and parking garages are very expensive. Changes to local parking regulations can help to reduce costs associated with parking facilities.

Table 9. Local Government Reason for STB by Infrastructure Type

Infrastructure Type	STB Cost of Projects for Growth % STB Total Cost[12]	STB Cost of Projects for Rehab/ Renovation % STB Total Cost	STB Cost of Projects for Unmet Existing Need % STB Total Cost
Roads and Bridges	$554,071,000 **(3%)**	$3,440,533,000 **(20%)**	$537,621,000 **(3%)**
Schools	$787,044,000 **(4%)**	$1,377,868,000 **(8%)**	$727,116,000 **(4%)**
Sanitary Sewer	$457,263,000 **(3%)**	$1,614,804,000 **(9%)**	$387,506,000 **(2%)**
Public Libraries	$538,262,000 **(3%)**	$666,443,000 **(4%)**	$945,044,000 **(5%)**
Economic Development	$481,210,000 **(3%)**	$111,589,000 **(1%)**	$749,288,000 **(4%)**
Total	$2,817,850,000 **(16%)**	$7,211,237,000 **(41%)**	$3,346,575,000 **(19%)**
All Other Types	$1,076,643,000 **(6%)**	$1,462,641,000 **(8%)**	$1,235,977,000 **(7%)**
TOTAL	$3,894,493,000 **(22%)**	$8,673,878,000 **(49%)**	$4,582,552,000 **(26%)**

[12] The total STB cost for all STB projects with reason information is $17,595,603,000.

B. COUNTY GOVERNMENT NEEDS

This section examines the survey results submitted by counties and Baltimore City, see **www.mdp.state.md.us/infrastructuresurvey** for individual county reports.

Table 10. Summary of Findings:

➢ **6,325 All Reported Projects**	**$37 billion ($6,930 per capita)**
➢ 4,024 Short-term Budgeted Projects	$22 billion ($4,280 per capita)
➢ 1,062 Short-term Unbudgeted Projects	$ 4 billion ($ 870 per capita)
➢ 1,239 Long Range Projects	$ 9 billion ($1,780 per capita)
Reason for Projects	
➢ 2,067 Rehab/Renovation	$11 billion ($2,070 per capita)
➢ 2,123 Existing Unmet Demand	$ 8 billion ($1,530 per capita)
➢ 1,704 Growth	$ 7 billion ($1,370 per capita)

PROJECTS and COST

Counties reported **6,325** infrastructure projects totaling **$36.7 billion** ($6,930 per capita). The six infrastructure types for which counties reported the highest number of projects and the greatest costs were parks and recreation, public libraries, roads and bridges, sanitary sewer, schools, and water supply.

Table 11. County Need

Infrastructure Type	Number of Projects	% of ALL Projects	TOTAL COST	% of All Projects Costs	Cost Per Capita
Roads and Bridges	1,456	23%	$10,102,132,000	28%	$1,910
Parks and Recreation	940	15%	$1,643,439,000	4%	$310
Schools	1,196	19%	$8,527,751,000	23%	$1,610
Sanitary Sewer	474	7%	$4,753,857,000	13%	$900
Public Libraries	171	3%	$2,317,200,000	6%	$440
Water Supply	360	6%	$2,076,843,000	6%	$390
Total	*3,657*	*73%*	*$27,777,783,000*	*76%*	*$5,250*
Total All Other Types	2,668	27%	$8,924,647,000	24%	$1,690
TOTAL	**6,325**		**$36,702,430,000**		**$6,930**

BUDGET SCHEDULE

Counties were asked to report on the budget schedule for each project. The budget schedule for which counties reported the most infrastructure projects was Short-term Budgeted (STB). This was expected, as counties should have information readily available on capital infrastructure projects included in their CIP, although 8% of the short-term budgeted projects did not have cost information. If eight percent of the total short term budgeted costs were added to the total it would increase the cost by $1.8 billion. Lack of cost information is problematic because it indicates that counties may not know what it will cost to fund their needs. If counties do not know the cost it will be difficult to generate the necessary funds.

Table 12. County Budget Type

Budget Type	# Projects	% Total Projects	Cost	% Total Project Cost	Per Capita Cost	% Projects Without Cost Info.
STB	4,024	64%	**$22,659,390,000**	62%	$4,280	8%
STU	1,062	17%	$4,601,904,000	13%	$870	10%
LR	1,239	20%	$9,441,137,000	26%	$1,780	11%

Short-term Budgeted Projects

Counties reported 4,024 STB needs totaling $22.7 billion ($4,280 per capita). The infrastructure types with the highest STB costs include: roads and bridges ($5 billion), schools ($4.7 billion), sanitary sewers ($3.7 billion), public libraries ($2.2 billion) and economic development ($1.5 billion).

Table 13. County STB Projects by Infrastructure Type

Infrastructure Type	Total STB Cost	STB Cost Per Capita	Annual STB Cost (STB divided by 6)	Annual STB Cost Per Capita	% Total STB Costs[13]
Roads and Bridges	$5,090,190,000	$960	$848,365,000	$350	22%
Schools	$4,749,849,000	$900	$791,641,500	$320	21%
Sanitary Sewer	$3,697,664,000	$700	$616,277,000	$150	16%
Public Library	$2,166,846,000	$410	$361,141,000	$120	10%
Economic Development	$1,472,618,000	$280	$245,436,000	$70	7%
Total	*$17,177,167,000*	*$3,240*	*$2,862,861,000*	*$540*	*76%*

[13] Total STB costs = $3,776,565,000

STB Funding Source

Counties are the primary funding source for each of the infrastructure types. Additionally, counties reported funding 55% of their roads and bridges projects, 77% of their schools, 34% of their public libraries, 28% of their sanitary sewer, and 21% of their economic development projects.

Table 14. County Reported Funding Sources for STB Projects by Infrastructure Type ($000 omitted)

STB: Infrastructure Type (total cost)	State Source (% total)	Federal Source (% total)	Private Source (% total)	Other Source (% total)	Municipal Source (% total)	County Source (% total)
Roads and Bridges ($5,090,190)	$701,350 (10%)	$2,275,110 (33%)	$74,970 (1%)	$44,880 (1%)	$45,350 (1%)	$3,794,930 (55%)
Schools ($10,009,620)	$965,240 (22%)	0	$21,010 (1%)	$8,330 (0%)	0	$3,318,740 (77%)
Sanitary Sewer ($4,460,090)	$1,009,560 (28%)	$555,230 (16%)	$732,830 (21%)	$40,610 (1%)	$237,890 (7%)	$977,900 (28%)
Public Library ($3,554,020)	$702,100 (33%)	$30 (0%)	$700,820 (33%)	$450 (0%)	$250 (0%)	$710,360 (34%)
Economic Development ($2,114,020)	$953,360 (73%)	$19,690 (2%)	$45,470 (4%)	$13,210 (1%)	0	$272,150 (21%)

As costs increase, local governments face greater pressure to create infrastructure that is financially self-sustaining by passing on more of the cost to users and residents and/or privatizing infrastructure systems. Counties indicated that debt is their greatest funding source (Table 15). This is one reason why the Government Accounting Standards Board (GASB) instituted Statement 34 (see Appendix D) to ensure that local governments are able to service their debt and properly maintain infrastructure.

Table 15. Source of Local Funds

County Funding Source	Roads and Bridges % of Projects[14]	Schools % of Projects	Sanitary Sewer % of Projects	Public Library % of Projects	Economic Development % of Projects	Water Supply % of Projects
Revenue/debt	10%	22%	4%	14%	19%	4%
Debt	**49%**	**49%**	**69%**	**58%**	**50%**	**66%**
Revenue	41%	29%	28%	28%	31%	30%

A portion of many capital project costs includes architecture and engineering and design fees. These fees range from 3 to 18% of the total project cost for the infrastructure types listed in Table 16. Many grants and loans only include funding for the construction costs, which may jeopardize the design integrity of a project. In many capital projects, such as parking facilities, roads, schools, sidewalks and streetscaping, design plays a major role. Design is a critical component of infill and redevelopment projects that warrant close examination of the built environment to blend the project into the existing fabric of the community. Funding and technical assistance needs to be made available to ensure incorporation of sound architectural, engineering and design work.

Table 16. County STB Architecture, Engineering, Design and Construction Fees

Counties STB: Infrastructure Type	Architecture, Engineering and Design Fees	Construction Fees
Roads and Bridges	$881,955,000 **(18%)**	$4,038,705,000 **(82%)**
Schools	$242,282,000 **(9%)**	$2,557,124,000 **(91%)**
Sanitary Sewer	$134,257,000 **(10%)**	$1,252,049,000 **(90%)**
Public Library	$52,874,000 **(3%)**	$1,979,705,000 **(97%)**
Economic Development	$100,000,000 **(4%)**	$2,500,000,000 **(96%)**

[14] Percent of projects reported for that infrastructure type that had funding source information available on type of funding.

REASON FOR PROJECT

Counties reported the percent of a project that was needed for rehabilitation/ renovation, existing unmet demand, growth and/or other. 1,243 projects (20%) do not have reason information and 219 of the projects with reason information do not have an associated cost provided.

Of the 6,225 projects with reason information, 2,230 projects (36%) were needed for rehabilitation/renovation, with an associated cost of $10.9 billion (41% or $2,070 per capita). Existing unmet demand accounts for the second highest reason category with 2,123 projects (34%). While the number of projects is close to that for the rehabilitation/renovation category, the associated cost is less, at $8 billion (30% or $1,530 per capita). It is not advisable to compare costs for rehabilitation and costs for growth related projects. Although it may seem financially advantageous to build new facilities, this would not take into account the full cost associated with new construction such as land acquisition and supporting infrastructure facilities that may need to be built or extended. New construction also creates additional costs for maintenance over the life of the infrastructure. The growth category had an associated cost close to that of existing unmet demand at $7.2 billion (27% or $1,370 per capita), but it accounted for fewer projects, 1,704 (27%). The other category accounted for only 168 projects (2.7%) with an associated cost of $513.3 million (2%).

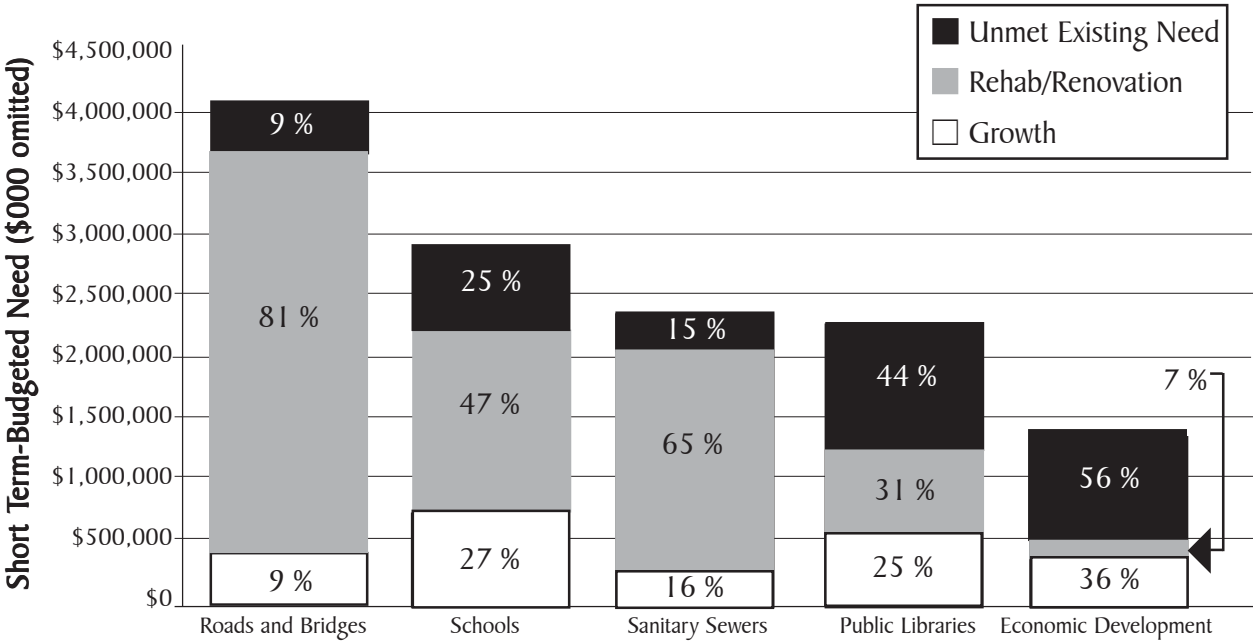
Table 17. County Reason

Reason Category	# Projects	% Total Projects	Cost of Projects	Cost Per Capita
Rehabilition/ Renovation	2,230	36%	$10,948,431,000	$2,070
Existing Unmet Demand	2,123	34%	$8,092,671,000	$1,530
Growth	1,704	27%	$7,241,106,000	$1,370

Table 18. County Reason for STB Projects by Infrastructure Type ($000 Omitted)

STB: Infrastructure Type	Cost for **Growth** % Total Cost for each Infra. Type	Cost for **Rehab/Renovation** % Total Cost for each Infra. Type	Cost for **Unmet Existing Need** % Total Cost for each Infra. Type	**Other**
Roads and Bridges ($4,157,760)	$378,090 **(9 %)**	$3,348,790 **(81 %)**	$383,490 **(9 %)**	$47,390 **(1 %)**
Schools ($2,874,050)	$779,590 **(27 %)**	$1,359,220 **(47 %)**	$710,210 **(25 %)**	$25,030 **(1 %)**
Sanitary Sewer ($2,327,670)	$376,780 **(16 %)**	$1,523,590 **(65 %)**	$354,890 **(15 %)**	$72,400 **(3 %)**
Public Libraries ($2,146,690)	$538,260 **(25 %)**	$661,900 **(31%)**	$945,040 **(44 %)**	$1,480 **(0 %)**
Economic Development ($1,377,310)	$465,760 **(36 %)**	$84,540 **(7 %)**	$733,570 **(56 %)**	$19,100 **(1 %)**
Total $12,809,140	$2,538,480 **(20 %)**	$6,978,050 **(54 %)**	$3,127,210 **(24 %)**	$165,400 **(1 %)**
All Other Types $3,166,520	*$935,750 (30%)*	*$1,049,310 (323%)*	*$957,120 (370%)*	*$224,340 (7 %)*
TOTAL	$3,474,240 **(22 %)**	$8,027,360 **(50 %)**	$4,084,330 **(26 %)**	$389,740 **(2 %)**

Chart 2. Reason for Short Term Budgeted Project Needs



This chart is based on the total STB cost provided for those projects with reason information. Not all projects contained reason information.

PROJECT LOCATION

It is probably no coincidence that the projects with PFA information are generally within Priority Funding Areas. Table 20 shows PFA status for the six infrastructure types highlighted earlier. The survey asked jurisdictions to provide state plane coordinates for each project in order to place them on a PFA map. Responses to this section were incomplete; however, Baltimore County included accurate coordinate information for many of their projects and a map is included as a model (see Page 48 for Map1 and Page 51for 1B).

As stated previously, PFAs are areas where the State targets resources to support existing communities and future growth. Several areas, including municipalities, land inside the Baltimore and Capital Beltways, designated neighborhoods, and enterprise zones, were designated as PFAs by law. In addition, the Priority Funding Areas Act outlined criteria for certification of additional Priority Funding Areas by local governments—in Table 19, these areas are called Compliance Areas.

Table 19. County PFA Status ($000 Omitted)

PFA Designation	Roads and Bridges	Parks and Recreation	Sanitary Sewer	Schools	Public Libraries	Water Supply	*Total*
Not in PFA	$78,560	$74,940	$5,190	$86,370	No Information	No Information	$24,060
% total cost	2%	26%	7%	4%			
Compliance Area	$954,760	$200,050	$57,690	$1,455,710	$72,190	$115,800	$2,668,210
% total cost	30%	69%	80%	68%	55%	88%	
Designated Neighborhood	$1,991,230	$380	$800	$272,240	$7,500	No Information	$2,271,150
% total cost	62%	0.1%	1%	13%	6%		
Enterprise Zone	$12,500	$550	$340	No Information	$14,020	No Information	$27,410
% total cost	0.4%	0.2%	0.5%		10%		
Inner Beltway	$174,500	No Information	No Information	$209,180	No Information	$8,840	$392,520
% total cost	5%			10%		7%	
Municipality	$1,310	$7,730	$6,700	$111,020	$18,300	$5,850	$150,910
% total cost	.04%	3%	9%	5%	14%	5%	
Rural Village	$2,160	$7,250	$1,320	$19,460	$20,140	$1,040	$51,370
% total cost	.07%	3%	2%	0.9%	15%	0.8%	
Total	**$3,215,020**	**$290,900**	**$72,030**	**$2,153,980**	**$132,140**	**$131,520**	**$5,995,590**
PFA not applicable or no PFA data available	*$8,002,860*	*$1,515,410*	*$5,211,440*	*$6,465,290*	*$2,196,870*	*$2,282,880*	*$25,674,750*

Reason and PFA Status

The projects reportedly in PFAs had a **total cost of $5.1 billion**. Out of 2,718 projects needed for growth,[15] 478 had information concerning their relation to Priority Funding Areas. Those projects had an associated cost of $2.2 billion (27% of total cost for projects reported in PFA's). 702 of the projects with PFA information are for rehabilitation/renovation with an associated cost of $2.2 billion (27% of total cost for projects reported in PFA's). 681 of the projects with PFA information are needed for existing unmet need with an associated cost of $3.7 billion (45% of total cost for projects reported in PFA's).

Table 20. Reason for Projects with PFA Information

Cost for Growth Related Projects % Total Cost	Cost for Rehab Related Projects % Total Cost	Cost for Existing Unmet Need Related Projects % Total Cost
$2,208,535,000 27%	$2,217,147,000 27%	$3,665,362,000 45%

[15] Accumulative costs for Growth, Rehab, and Existing Unmet Demand are greater than the associated cost for total project costs in Priority Funding Areas due to percent allocation.

Table 21. PFA Designation by Reason

PFA Designations: Growth Projects (478 projects with PFA information)	Cost $2,365,828,000	% Total Cost[16]
Not in PFA	*$71,324,000*	*3%*
Exception	*$62,975,000*	*2%*
Not applicable	*$22,995,000*	*1%*
Compliance Area	$1,223,448,000	52%
Designated Neighborhood	$788,857,000	33%
Enterprise Zone	$58,104,000	2%
Heritage Area	$60,000	0%
Inner Beltway	$76,405,000	3%
Municipality	$48,300,000	2%
Rural Village	$13,361,000	0.6%
Total PFA	**$2,208,535,000**	**93%**

PFA Designations: Rehab/Renovation Projects (702 projects with PFA information)	Cost $2,352,092,000	% Total Cost
Not in PFA	*$114,772,000*	*5%*
Exception	*$15,896,000*	*1%*
Not applicable	*$4,277,000*	*0%*
Compliance Area	$1,236,774,000	53%
Designated Neighborhood	$684,327,000	29%
Enterprise Zone	$13,348,000	1%
Heritage Area	$0	0%
Inner Beltway	$140,721,000	6%
Municipality	$123,273,000	5%
Rural Village	$18,704,000	1%
Total PFA	**$2,217,147,000**	**94%**

PFA Designations: Unmet Need Projects (681 projects with PFA information)	Cost $3,868,574,000	% Total Cost
Not in PFA	*$118,182,000*	*3%*
Exception	*$60,028,000*	*2%*
Not applicable	*$25,003,000*	*1%*
Compliance Area	$2,645,694,000	68%
Designated Neighborhood	$765,726,000	20%
Enterprise Zone	$12,474,000	0%
Heritage Area	$30,000	0%
Inner Beltway	$165,087,000	4%
Municipality	$55,417,000	1%
Rural Village	$20,934,000	1%
Total PFA	**$3,665,362,000**	**95%**

[16] Percentages may not add to 100% due to rounding off.

C. MUNICIPAL GOVERNMENT NEEDS

This section examines the surveys completed by all municipalities, excluding Baltimore City.[17] Typically, municipalities have fewer infrastructure facilities and systems for which they are responsible, depending on the size and structure of each municipality.

Table 22. Summary of Findings:

➢ **3,145 All Reported Projects**	**$3.4 billion ($4,420 per capita)**
➢ 1,357 Short-term Budgeted Projects	$1.6 billion ($2,080 per capita)
➢ 1,077 Short-term Unbudgeted Projects	$0.7 billion ($ 990 per capita)
➢ 711 Long Range Projects	$ 1 billion ($1,350 per capita)
Reason for Projects	
➢ 1,495 Rehab/Renovation	$ 1 billion ($1,490 per capita)
➢ 1,233 Existing Unmet Demand	$0.8 billion ($1,530 per capita)
➢ 1,014 Growth	$ 1 billion ($1,460 per capita)

PROJECTS and COSTS

Municipalities reported 3,145 infrastructure projects totaling $3.4 billion ($4,420 per capita). The five infrastructure types for which municipalities reported the highest costs were roads and bridges, sanitary sewer, water supply, airports and economic development.

INFRASTRUCTURE TYPES

Municipalities differ from counties in their greater need for airports, economic development and government buildings.

[17] Population for all municipalities represented in the survey totals 760,472

Table 23. Municipality Need

Infrastructure Type	Number of Projects	% of all Projects	Total Cost	% of all Project Costs	Cost Per Capita
Roads and Bridges	663	21%	$1,115,743,000	33%	$1,440
Parks and Recreation	384	12%	$162,876,000	5%	$210
Sanitary Sewer	376	12%	$529,618,000	15%	$680
Water Supply	493	16%	$337,562,000	10%	$440
Government Buildings	223	7%	$121,102,000	4%	$160
Economic Development	103	3%	$162,934,000	5%	$210
Airports	15	0%	$288,204,000	8%	$370
Total	*1,650*	*71%*	*$2,432,561,000*	*80%*	*$3,140*
All Other Types	1,497	29%	$994,208,000	20%	$1,280
TOTAL	**3,147**		**$3,426,769,000**		**$4,420**

BUDGET SCHEDULE

Municipalities were asked to report on the budget schedule for each project. The budget schedule for which municipalities reported the most infrastructure projects was short-term budgeted. This was expected as municipalities have the most information on projects included in their CIP. Additionally, even municipalities without a CIP would generally have a better understanding of their more obvious, short-term needs. Seven percent of STB projects have no cost information. Seven percent of the total STB cost would increase the total cost by $112.6 million.

Table 24. Municipality Budget Type

Budget Type	# Projects	% Total Projects	Cost	% Total Project Cost	Per Capita Cost	%Projects Without Cost Info.
STB	1,357	43%	**$1,608,006,000**	47%	$2,080	7%
STU	1,077	34%	$ 769,836,000	23%	$990	13%
LR	711	23%	$1,046,728,000	31%	$1,350	16%

Short-term Budgeted Projects

With the exception of economic development, municipalities and counties have similar short-term infrastructure needs. Municipalities reported that their greatest STB need was roads and bridges (27%). Economic Development projects included such things as main street improvements, community centers, information/tourist centers, business parks, pedestrian improvements, façade improvements, and town center redevelopment projects.

Table 25. Municipality STB Projects by Infrastructure Type

Infrastructure Type	Total STB Cost	% Total STB Project Costs	STB Cost Per Capita	Annual STB Cost	Annual STB Cost Per Capita
Roads and Bridges	$437,203,000	27%	$530	$72,867,170	$89
Sanitary Sewer	$230,479,000	14%	$310	$38,413,170	$51
Water Supply	$155,305,000	10%	$200	$25,884,170	$34
Parks and Recreation	$ 73,806,000	5%	$ 80	$12,301,000	$14
Economic Development	$ 61,397,000	4%	$ 71	$10,232,800	$12
Total	*$958,190,000*	*60%*	*$1,196*	*$159,698,000*	*$200*

STB Funding Source

Funding source information is in aggregate and may differ greatly depending on the size of the municipality.

Table 26. Municipal Funding Sources for STB Projects by Infrastructure Type ($000 omitted)

STB: Infrastructure Type (total cost)	State Source (% total)	Federal Source (% total)	Private Source (% total)	Other Source (% total)	Municipal Source (% total)	County Source (% total)
Roads and Bridges ($411,030)	$182,270 (44%)	$44,8890 (11%)	$12,410 (3%)	$22,330 (5%)	$126,150 (31%)	$22,980 (6%)
Sanitary Sewer ($237,650)	$26,290 (11%)	$14,940 (6%)	$5,660 (2%)	$23,750 (10%)	$164,030 (70%)	$2,970 (1%)
Water Supply ($157,700)	$18,750 (12%)	$8,690 (6%)	$1,230 (1%)	$22,930 (15%)	$106,110 (66%)	$0
Parks and Recreation ($63,910)	$12,460 (19%)	$2,000 (3%)	$690 (1%)	$2,790 (4%)	$41,190 (65%)	$4,800 (8%)
Economic Development ($54,580)	$12,330 (23%)	$5,540 (10%)	$5,760 (11%)	$110 (0%)	$22,580 (41%)	$8,270 (15%)
Total	*$252,100*	*$76,060*	*$25,750*	*$49,580*	*$460,060*	*$39,020*

According to Moody's investment firm, only 14 municipalities (see Appendix I., Page 94, Municipalities Issuing Bonds) have currently issued debt (Table 27).

Table 27. Municipal Source of Local Funds

Municipal Funding Source	Roads and Bridges % of Projects[18]	Sanitary Sewer % of Projects	Water Supply % of Projects	Parks and Recreation % of Projects	Economic Development % of Projects
Revenue/debt	10%	10%	15%	13%	6%
Debt	37%	24%	23%	13%	47%
Revenue	**53%**	**67%**	**61%**	**74%**	**47%**

[18] Percent of projects reported for that infrastructure type that had funding source information available on type of funding.

Table 28. Municipal STB Architecture, Engineering, Design and Construction Fees

Municipalities STB: Infrastructure Type	Architecture, Engineering and Design Fees	Construction Fees
Roads and Bridges	$15,002,000 **(5%)**	$260,417,000 **(95%)**
Sanitary Sewer	$252,447,000 **(17%)**	$1,201,649,000 **(83%)**
Water Supply	$5,193,000 **(8%)**	$59,670,000 **(92%)**
Parks and Recreation	$4,666,000 **(13%)**	$30,661,000 **(87%)**
Economic Development	$5,070,000 **(30%)**	$11,734,000 **(70%)**

Municipalities appear to spend a greater percentage of funding for economic development projects on design than counties. This may be because most economic development projects in municipalities were reported as streetscape and main street projects that require a closer look at design. However, counties' overall cost for economic development projects is much greater than that for municipalities.

REASON FOR PROJECT

Municipalities reported the percent of a project that was needed for rehabilitation/ renovation, existing unmet demand, growth and/or other (jurisdictions were provided with space to explain the "other" reason category). Four hundred and eighty five projects do not have reason information and 297 of the projects with reason information did not include cost information.

Of the projects with reason information, 1,495 projects were needed for rehabilitation/renovation, with an associated cost of $1.1 billion (34%). Existing unmet demand accounts for the second highest category with 1,233 projects and an associated cost of $820 million (24%). The growth category had an associated cost close to that of rehabilitation/renovation at $1.1 billion (33%) but accounted for over 400 fewer projects - 1,014. The other reason category accounted for only 158 projects and had an associated cost of $140 million.

Table 29. Municipality Reason

Reason Category	# Projects	% Total Projects	Cost of Projects	Cost Per Capita
Rehabilition/ Renovation	1,495	39%	$1,151,576,000	$1,490
Existing Unmet Demand	1,233	35%	$819,239,000	$1,060
Growth	1,014	29%	$1,133,241,000	$1,460

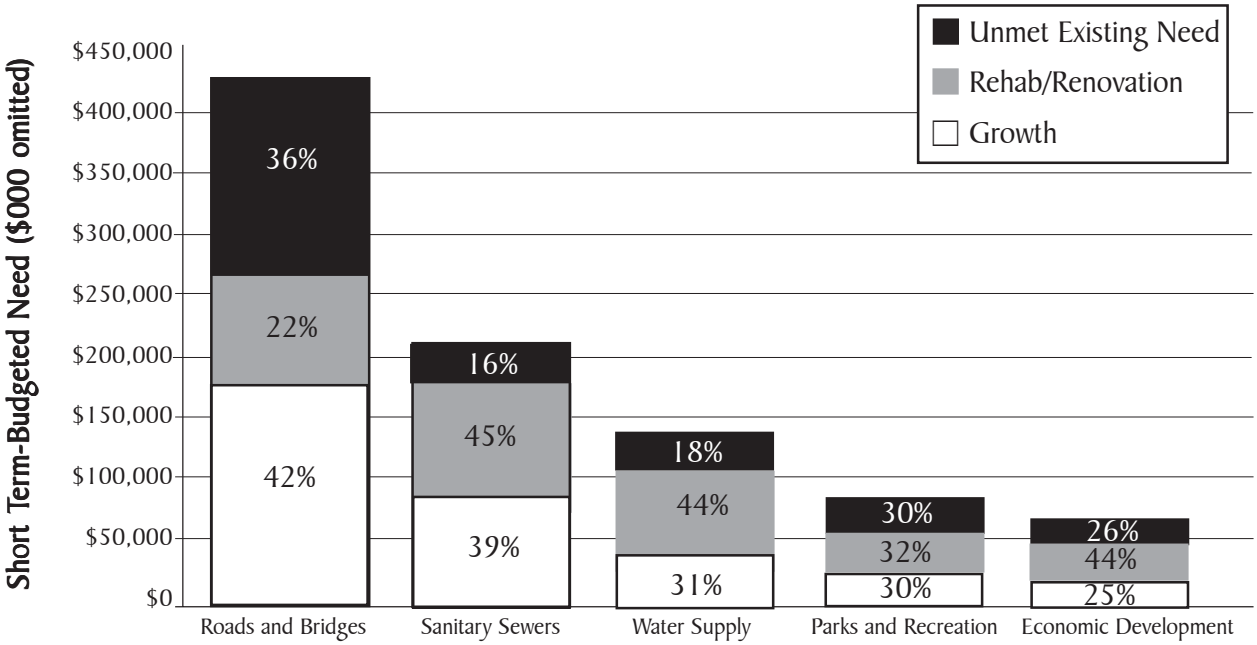
Municipal: Reason and Short-Term Budgeted Projects

Municipalities reported needing the greatest number of short-term budgeted projects for rehabilitation/renovation. With the exception of roads and bridges the same is true for funding, as depicted in Chart 3. Municipalities budgeted more money for roads and bridges than any other infrastructure type, with the majority of the roads and bridges funding allocated for projects needed for growth.

Table 30. Municipality Reason for STB Projects ($000 Omitted)

STB: Infrastructure Type	Cost for **Growth** % Total for each Infrastructure Type	Cost for **Rehab/Renovation** % Total for each Infrastructure Type	Cost for **Unmet Existing Need** % Total for each Infrastructure Type	**Other**
Roads and Bridges $424,050	$175,980 **42%**	$91,740 **22%**	$154,130 **36%**	$2,200 **1%**
Sanitary sewer $204,310	$80,490 **39%**	$91,210 **45%**	$32,610 **16%**	0 **0%**
Water Supply $143,830	$44,760 **31%**	$62,710 **44%**	$25,940 **18%**	$10,420 **7%**
Parks and Recreation $72,660	$22,050 **30%**	$23,500 **32%**	$22,060 **30%**	$5,060 **7%**
Economic Development $61,350	$15,450 **25%**	$27,050 **44%**	$15,720 **26%**	$3,130 **5%**

Chart 3. Municipalities: Reason for Short-Term Budgeted Project by Cost



This chart is based on the total STB cost provided for those projects with reason information. Not all projects contained reason information.

D. STATE AGENCY NEEDS

A list of State agencies surveyed can be found in the Appendix on page 96. State agencies reported on projects conducted and funded by the State without contributions from local governments. Detailed State agency reports can be found at **www.mdp.state.md.us/infrastructuresurvey.**

Table 31. Summary of Findings:

➢ **1,874 All Reported Projects**	**$21.5 billion ($4,060 per capita)[19]**	
➢ 1,007 Short-term Budgeted Projects	$20 billion	($3,780 per capita)
➢ 590 Short-term Unbudgeted Projects	$ 1 billion	($ 200 per capita)
➢ 280 Long Range Projects	$ .4 billion	($ 80 per capita)
Reason for Projects		
➢ 860 Rehab/Renovation	$ 6 billion	($1,160 per capita)
➢ 382 Existing Unmet Demand	$ 5 billion	($ 900 per capita)
➢ 250 Growth	$ 4 billion	($ 760 per capita)

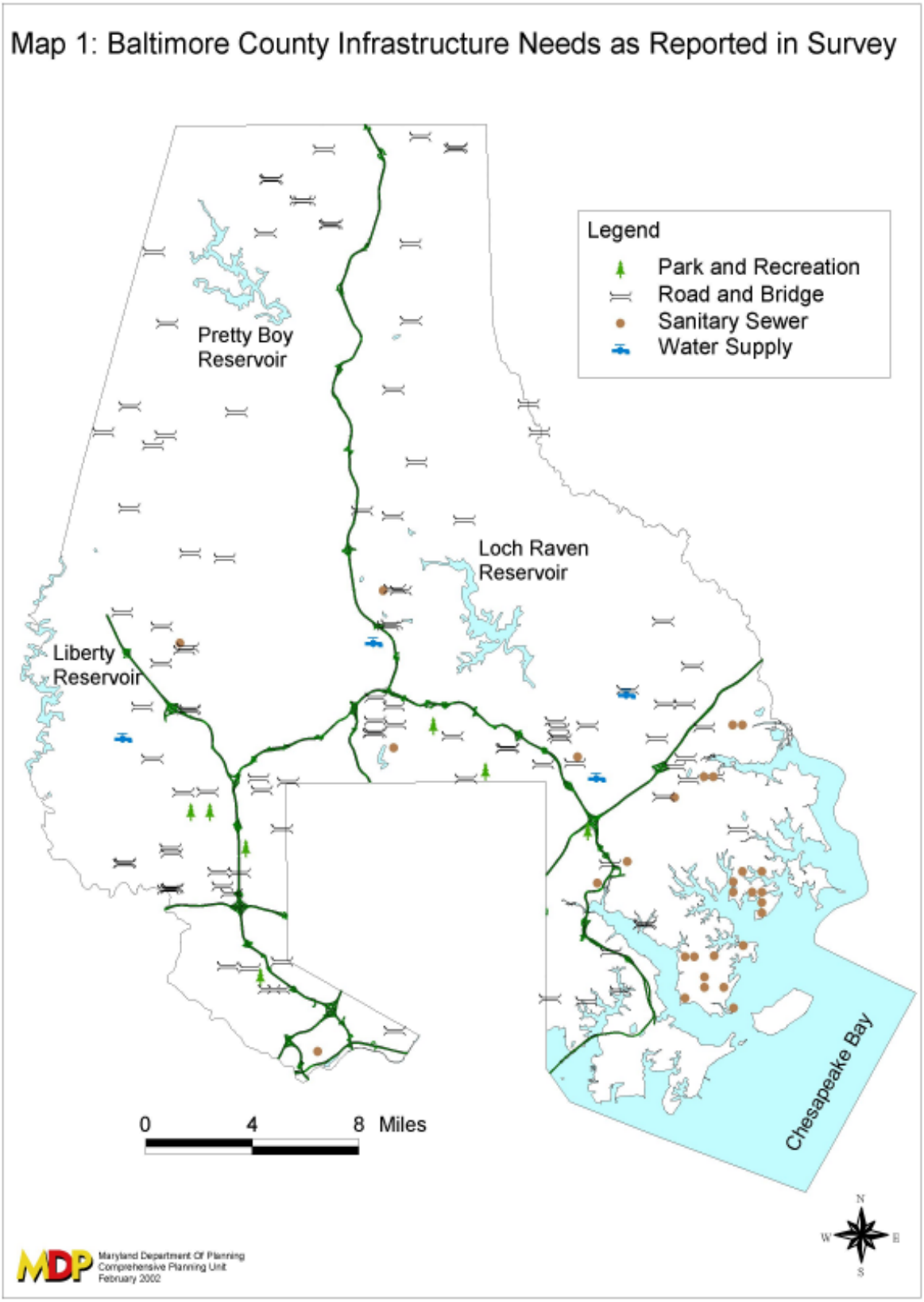
PROJECTS and COST

State agencies reported 1,874 infrastructure projects totaling $21.5 billion ($4,057 per capita). The five infrastructure types for which state agencies reported the highest costs were airports, detention facilities, public transportation, roads and bridges, and schools.

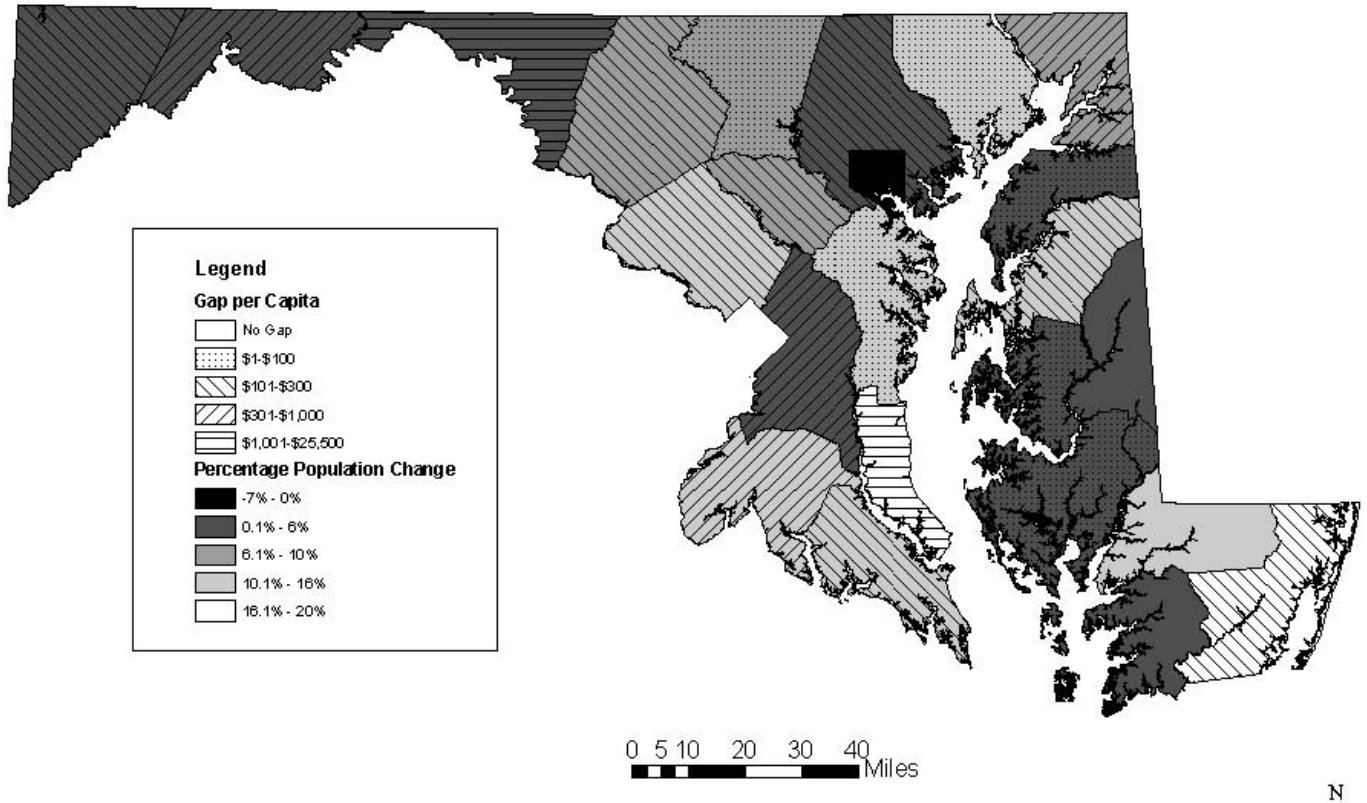
[19] Population for the State of Maryland in 1999 was 5,296,486

Table 32. State Agency Needs
INFRASTRUCTURE TYPES

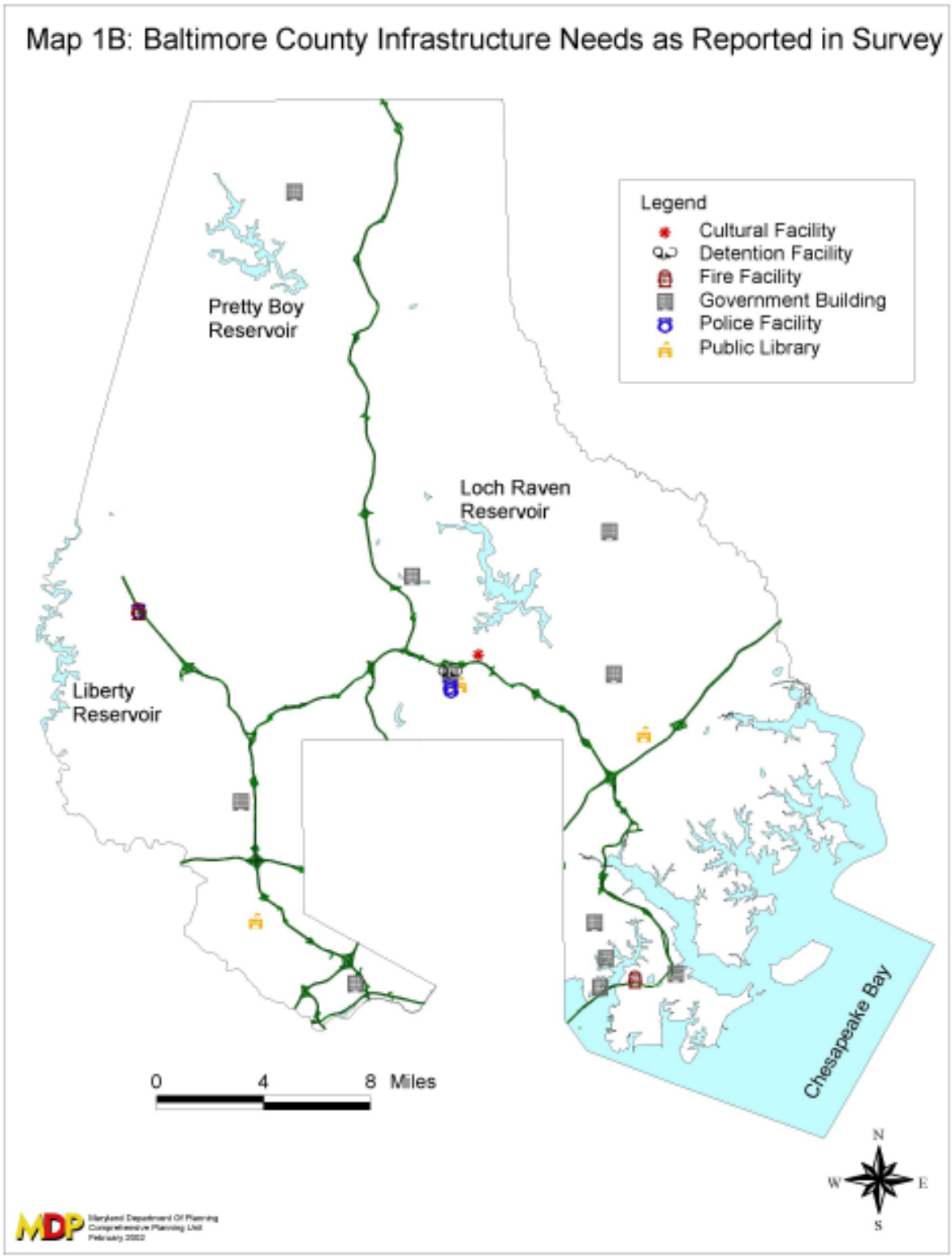
Infrastructure Type	Number of Projects	% of all Projects	Total Cost $000 omitted	% of all Project Costs	Cost Per Capita
Airports	45	2%	$1,621,073	8%	$310
Detention Facilities	173	9%	$2,897,995	13%	$550
Government Buildings	269	14%	$374,933	2%	$70
Health and Human Services	252	13%	$425,872	2%	$80
Ports	285	15%	$592,504	3%	$110
Public Transportation	75	4%	$6,395,461	30%	$1,210
Roads and Bridges	201	11%	$5,339,933	25%	$1,010
Schools	210	11%	$2,385,976	11%	$450
Total	*1,510*	*79%*	*$20,033,747*	*94%*	*$3,790*
All Other Types	364	21%	$1,454,155	6%	$270
TOTAL	**1,874**		**$21,487,902**		**$4,060**


Map 1: Baltimore County Infrastructure Needs as Reported in Survey
Legend
Park and Recreation
Road and Bridge
Sanitary Sewer
Water Supply
Pretty Boy Reservoir
Loch Raven Reservoir
Liberty Reservoir
Chesapeake Bay
0
4
8 Miles
N
W
E
S
MDP
Maryland Department Of Planning
Comprehensive Planning Unit
February 2002

Map 2: Population Growth and Gap per Capita Between Short-term Budgeted Needs (FY2000) and Average Capital Expenditures (FY 1997-99)



MDP Maryland Department of Planning
Comprehensive Planning Division
January 2002


Map 1B: Baltimore County Infrastructure Needs as Reported in Survey
Legend
Cultural Facility
Detention Facility
Fire Facility
Government Building
Police Facility
Public Library
Pretty Boy Reservoir
Loch Raven Reservoir
Liberty Reservoir
Chesapeake Bay
0
4
8 Miles
N
W
E
S
MDP

As noted above, for all State agencies the infrastructure types with the most reported needs and highest costs were airports, detention facilities, government buildings, health and human services, ports, public transportation, roads and bridges, and schools. These infrastructure types differ from local government needs by the addition of detention facilities, health and human services, and ports. This is because the state plays a major role in the provision of those infrastructure types.

BUDGET SCHEDULE

The budget schedule for which state agencies reported the most infrastructure projects was short-term budgeted, making up 93% of all project costs. The relatively few number of long range projects may indicate an under-reporting of this category.

Table 33. State Agency Budget Type

Budget Type	# of Projects	% of Total Projects	Cost	% ofTotal Project Cost	Per Capita Cost	#Projects With No Cost Info.
STB	1,007	54%	$20,017,000,000	93%	$3,780	38
STU	590	32%	$1,056,115,000	5%	$200	111
LR	277	15%	$ 414,096,000	2%	$80	91

Short-term Budgeted Projects

Short-term Budgeted needs total $20 billion ($3,780 per capita) with the majority of costs needed for public transportation (32%). The five infrastructure types with the greatest STB need are listed in Table 34. As Maryland strives to comply with Federal air quality standards, public transportation and compact, mixed-use development around transit stations is quickly becoming one method to attain cleaner air. One barrier to such development is the initial development cost even though the long term environmental, social, and economic benefits are substantial. Surprisingly, detention facilities and airports were high short-term budgeted needs. Detention facilities are currently estimated to cost almost 60% more than the STB costs per capita for schools and impose the third highest STB cost.

Table 34. State Agency STB Projects by Infrastructure Type ($000 omitted)

Infrastructure Type	Total STB Cost	% Total STB Costs	STB Cost Per Capita	Annual STB Cost	Annual STB Cost Per Capita
Public Transportation	$6,395,460	32%	$1,207	$1,065,910	$201
Roads and Bridges	$5,283,710	26%	$ 998	$ 880,620	$166
Detention Facilities	**$2,825,340**	**14%**	**$ 533**	**$ 470,890**	**$ 89**
Schools	$1,805,020	9%	$ 341	$ 300,840	$ 57
Airports	**$1,619,360**	**8%**	**$ 306**	**$ 269,890**	**$ 51**
Total	***$17,928,890***	***89%***	***$3,385***	***$2,988,150***	***$564***

REASON FOR PROJECT

State agencies reported the percentage of a project that was needed for rehabilitation/renovation, existing unmet demand, growth and/or other (agencies were provided with space to explain the other reason category). State agencies were not required to complete this field in the survey and consequently, 29% of the projects do not have reason information.

Of the projects with reason information, **rehabilitation/renovation** amounted to the greatest need with 855 projects (56%) and an associated cost of $6.1 billion ($1,160 per capita). The **rehabilitation/renovation** category covers major maintenance and repair of existing facilities, which indicates that State agencies are spending most of their resources preserving facilities, a reflection of Smart Growth. **Existing unmet demand** accounts for the second highest reason category with 382 projects (25%) with an associated cost of $4.7 billion ($895 per capita). The **growth** reason category has 247 projects (16%) with an associated cost of $4 billion ($764 per capita). The **other** reason category accounted for only 53 projects (3.5%) with an associated cost of $3.8 billion ($716 per capita). The other needs are predominantly for cultural facilities and public transportation projects. Most of the public transportation other needs were for safety, noise mitigation and transit oriented development projects.

Table 35. State Agency Reason

Reason Category	# Projects	% Total Projects	Cost of Projects	Cost Per Capita	% Total Cost
Rehabilition/ Renovation	855	56%	$6,125,769,000	$1,160	33%
Existing Unmet Demand	382	25%	$4,742,529,000	$ 900	25%
Growth	247	16%	$4,044,684,000	$ 760	22%

Reason and Short-term Budgeted

Public transportation projects carry the highest reported costs for State agencies. The costs for this infrastructure type appear to be evenly distributed between growth, rehabilitation/renovation, and existing unmet need. There is no documentation of the amount of demand for public transportation services that might arise if an adequate system were in place. For example, planning for new systems envisions increased service to existing development nodes. Subsequently, those plans would more appropriately be listed under meeting unmet needs rather than new growth. Conceivably parking facilities at transit stations might be attributed to growth, and an increased focus on transit-oriented development, when that occurs, could also be attributed to growth. Currently, public transportation projects included in the survey as needed for growth, are predominantly described as projects for parking expansion at transit stations (see detailed reports at **www.mdp.state.md.us/infrastructuresurvey**).

Table 36. State Agency Reason for STB Project

STB: Infrastructure Type (Cost of the projects with reason information)	Cost for Growth (% total infrastructure Type Cost)	Cost for Rehab/ Renovation (% total infrastructure Type Cost)	Cost for Unmet Existing Need (% total infrastructure Type Cost)	Other
Public Transportation ($6,907,424,000)	$1,253,830 (18%)	$1,224,890 (18%)	$1,273,480 (18%)	$3,155,230 (46%)
Roads and Bridges ($5,312,755,000)	$626,590 (12%)	$2,802,600 (53%)	$1,687,800 (32%)	$195,760 (3%)
Detention Facilities ($168,536,000)	$14,200 (8%)	$31,620 (19%)	$122,720 (73%)	0
Schools ($1,800,070,000)	$477,150 (27%)	$365,770 (20%)	$957,150 (53%)	0
Airports ($1,786,791,000)	$1,253,990 (70%)	$430,080 (24%)	$0	$102,720 (6%)
Total	**$3,625,770 23%**	**$4,854,960 30%**	**$4,041,150 25%**	**$3,453,710 22%**

CHAPTER 4:
CAPACITY TO FUND INFRASTRUCTURE

Local governments have numerous ways to finance infrastructure. The ability to generate revenue depends on the availability of these opportunities and the willingness of a jurisdiction's elected officials and citizens to make use of these opportunities. Funding sources include:

- "Pay as you go" – also referred to as "PAYGO" – uses revenues in the General Fund;
- General obligation bonds repaid from tax revenues;
- Private – user fees, impact fees, development excise taxes, hook-up fees for infrastructure to serve new development;
- Revenue bonds repaid from dedicated tax revenues;
- Gifts from individuals, foundations, and non-profit organizations;

STATE FUNDING FOR LOCAL INFRASTRUCTURE

Funding sources also include state and federal grants and loans to local governments for infrastructure. State funding streams for FY2000 by infrastructure type include:

Sanitary Sewer

- Maryland Department of the Environment: Biological Nutrient Removal - $12 million. Provides grants to local governments for the removal of nutrients from the discharge of sewage treatment plants.
- Maryland Department of the Environment: Supplemental Assistance - $2.6 million. Grant assistance to local governments constructing compliance related wastewater facility improvements.
- Maryland Department of the Environment: Water Quality Revolving Loan Fund - $172 million. Low interest loans to local governments which finance waste water treatment plan improvements. The Clean Water Act of 1996 and annual Federal appropriations set up a schedule of capitalization grants to the States to initiate their revolving funds. Grants require a 20% State match.

Water Supply

- Maryland Department of the Environment: Water Supply Assistance Fund - $2.5 million. Provides grants and loans to assist small communities in the acquisition, design, construction, and rehabilitation of publicly owned water supply facilities.

Public Schools

- Public School Construction Program - $250 million. Provides State funding for eligible and justified public school construction projects that are approved by the Board of Public Works.

Roads and Bridges

- Maryland Department of Transportation: Construction Program - $563 million. (State Highway Administration funds for major projects and system preservation minor projects.)

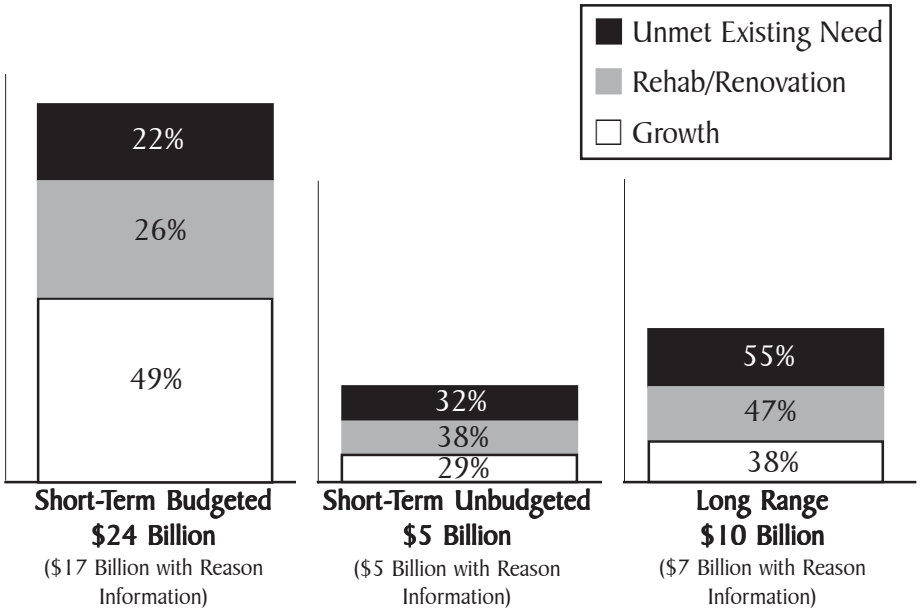
In addition, the State has a "Local Government Infrastructure Financing Program," which provides efficient and economical access to capital markets to finance specific infrastructure projects. The Maryland Department of Housing and Community Development (DHCD) issues bonds on behalf of counties, municipalities, and their instrumentalities to finance public purpose infrastructure projects. The program generates savings in the costs of borrowing by pooling the local demand and managing issuance of the bond. A project is eligible for financing through the program if it is planned, acquired, owned, developed, constructed, reconstructed, rehabilitated, or improved by or on behalf of a local government, including its agencies and instrumentalities, in order to provide the essential physical elements that constitute the basis of the public service system.

A. NEED AND EXPENDITURES

LOCAL GOVERNMENT: Need in Comparison to Spending

Statewide, local governments reported infrastructure needs of $40 billion ($7,580 per capita): $24 billion ($4,580 per capita) budgeted for the next six years, $5 billion unbudgeted short-term needs ($1,010 per capita), and $10 billion ($1,980 per capita) for long range projects.

Chart 4. Local Government Reason for Project by Budget Type



Annual Need

Over the next six years, local governments need $4.9 million ($933 per capita) annually to meet their short-term infrastructure needs. They have an annual budgeted need of $4 billion ($763 per capita) and an additional annual unbudgeted need of $895 million ($169 per capita).

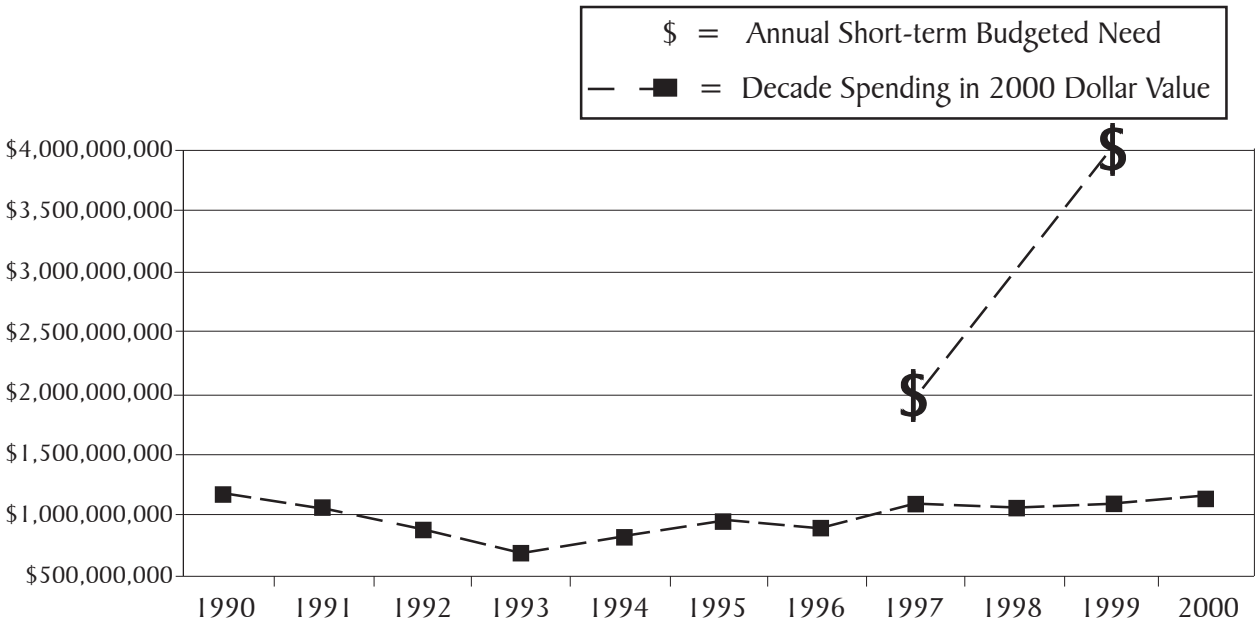
Recent Local Government Spending

Past rate of spending is one indicator of the amount of capital investment in infrastructure. In recent years, county governments spent an annual average amount of $1 billion ($192 per capita) for capital projects (FY 1997 –FY 1999).[20] Survey results show that statewide, over the next six years, local governments have an average annual need four times recent annual capital spending by counties.[21]

Funding Gap

With an annual budgeted need of $4 billion over the next six years, $24 billion total for six years, and an annual capital spending average amount of $1billion, it will take local governments approximately 24 years to fund their current short term budgeted needs. Unbudgeted, short-term needs would require an additional year of capital spending at current rates. This does not take into account the cost of inflation if needs are deferred, as the cost will likely increase over time. It is not safe to assume that because a project is reported as short term budgeted that it will receive the appropriate level of funding. For example, a project in year three of an approved CIP may not move into year two the following year due to budget constraints or for other reasons. This is evident in the large gap between reported need and historical spending by local governments.

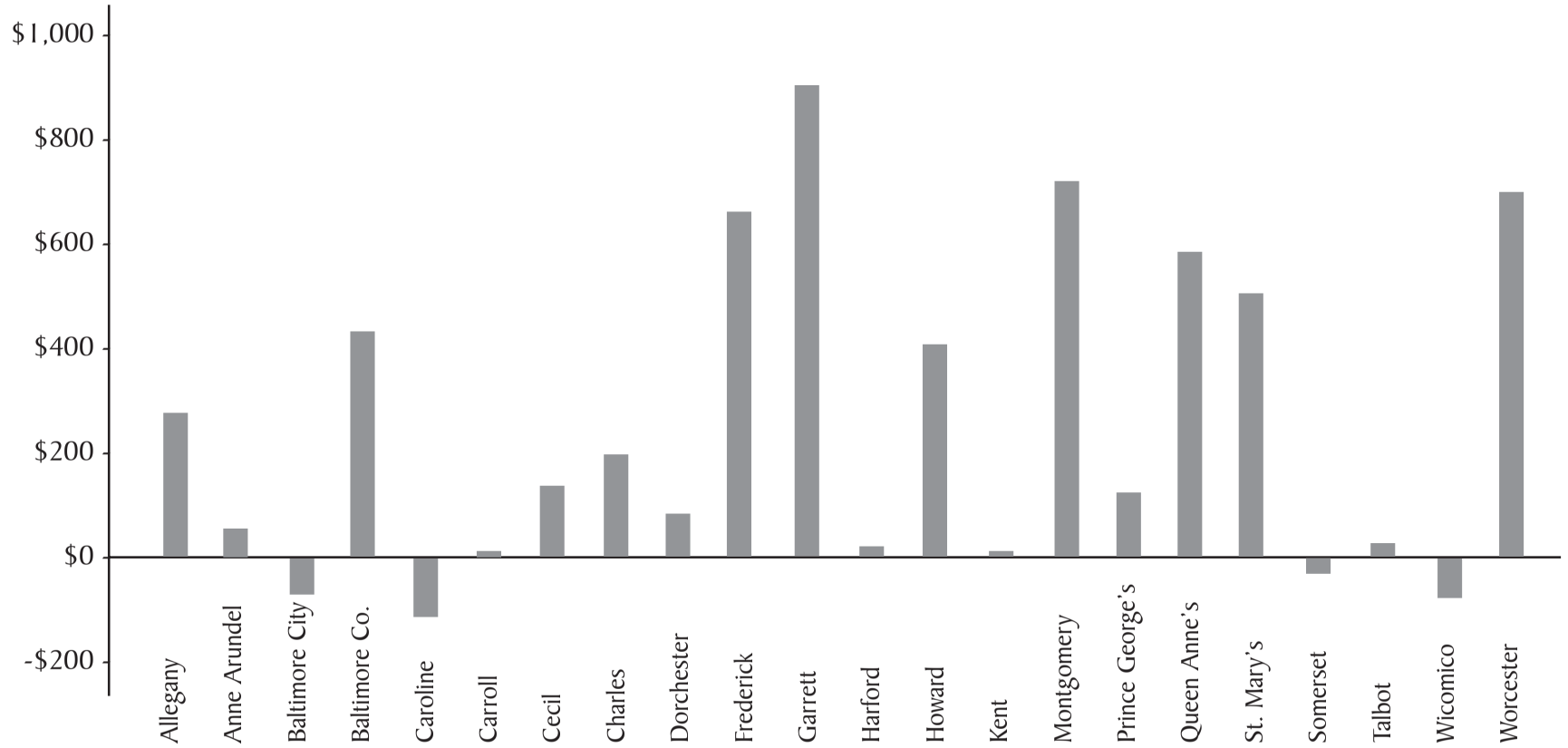
Chart 5. Local Government Capital Spending Statewide



[20] Local Government Finances in Maryland-Fiscal Year Ending June 30, 1997 and Fiscal Year Ending June 30, 1999.

[21] This figure is based on annual capital county expenditures as information on total capital spending by municipalities is incomplete. Municipal governments account for only $396,307,000, or 8% of the overall annual need.

Chart 6. County Government Funding Gap[22]



[22] Calvert County and Washington County's Funding Gap amounts were not included as they are $7,508 and $25,408 respectively. These high numbers did not fit in the graph. Negative funding gap most likely due to incomplete reporting of need.

Local Governments: Need in Comparison to Spending

Statewide, county governments reported budgeted infrastructure needs for the next six years of $22.7 billion ($4,300 per capita) and an additional $4.6 billion unbudgeted ($870 per capita) for a total of $27.3 billion ($5,150 per capita). Statewide, municipal governments reported having infrastructure needs for the next six years of $1.6 billion statewide ($1,130 per capita) and an additional $770 million unbudgeted ($540 per capita) for a total of $2.4 billion ($1,670 per capita).

Annual Need

Statewide, county governments have an annual budgeted need of $3.8 billion ($710 per capita) for the next six years and an additional $770 million ($150 per capita) unbudgeted for a total of $4.5 billion ($860 per capita) annual need for the next six years. Statewide municipal governments have an annual need of $270 million ($190 per capita) for the next six years and an additional $130 million ($90 per capita) unbudgeted for a total need of $400 million ($280 per capita) annual need for the next six years.

Recent County Spending

In recent years, county governments spent an annual average amount of $1 billion ($190 per capita) for capital projects (FY 1997 – FY 1999). Survey results show that statewide, over the next six years, county governments have an average annual need almost four times recent annual capital spending.

STATE AGENCIES: Need in Comparison to Spending

State agencies reported infrastructure needs budgeted for the next six years of $21 billion ($3,780 per capita) and an additional $1 billion unbudgeted ($200 per capita) for a total of $22 billion ($3,980 per capita). The majority of that money is for public transportation, roads and bridges, and detention facilities, although this does not reflect the money allocated by the State to local governments for additional capital expenditures.

Annual Need

State agencies reported a budgeted annual need of $3 billion ($630 per capita) for the next six years and an additional $180 million ($30 per capita) unbudgeted for a total of $3.2 billion ($660 per capita) annually for the next six years.

Funding Gap

In recent years, State agencies, exclusive of the Maryland Department of Transportation, spent an annual average amount of $1 billion ($200 per capita) for all capital projects (FY 2000). The Department of Transportation had an annual capital budget of $1 billion ($230 per capita). Maryland's total capital budget for FY2000 was $2 billion ($430 per capita). Survey results show that statewide, over the next six years, State agencies have an average annual need one and one half times recent annual capital spending. Presumably, the smaller gap in comparison to local governments is reflective of having a stringent capital budgeting process.

Expenditures

In comparison to reported needs, county expenditures are highest for transportation infrastructure projects,[23] which include highway and street maintenance, parking facilities, airport facilities and transit services.

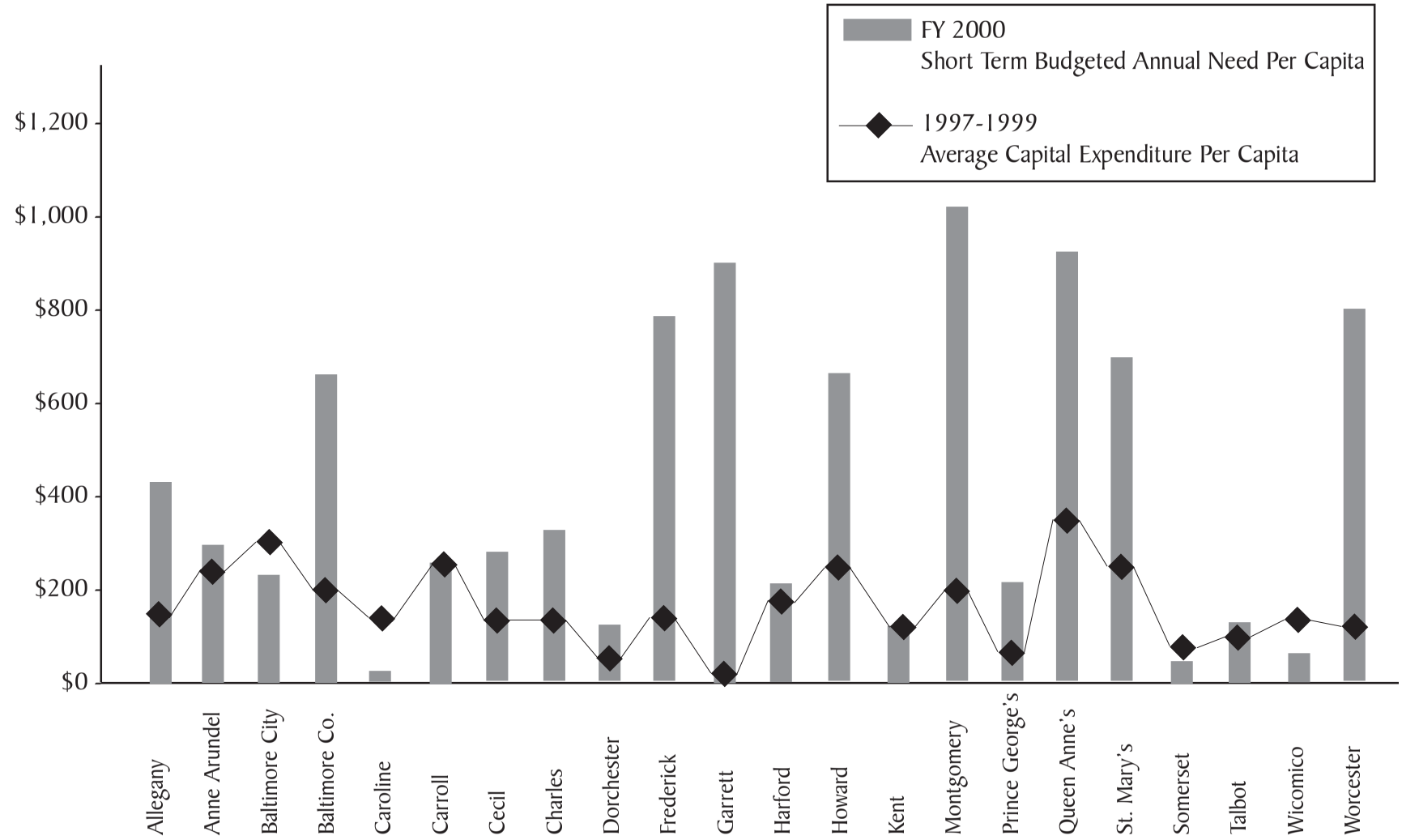
Table 37. County Capital Expenditures by Infrastructure ($000 omitted)

Infrastructure Type[24]	STB Need	Annual Need Over Next 6 Years	FY 1999 County Expenditure	Gap: Annual Need Minus County Expenditure (% of Annual Need)
Roads and Bridges/Airports/ Parking/Public Transportation	$5,599,500	$933,250	$231,740	**$701,510** (75%)
Sanitary Sewer	$5,347,630	$891,270	$55,790	**$835,480** (94%)
Schools	$4,749,850	$791,640	$515,450	**$276,200** (35%)
Public Libraries	$2,166,850	$361,140	$4,690	**$356,450** (99%)
Parks and Recreation	$1,031,630	$171,940	$65,350	**$106,590** (62%)
Total	*$18,895,450*	*$3,149,240*	*$873,010*	***$2,276,230*** *(72%)*

[23] Local Government Finances in Maryland, Fiscal Year Ending June 30,1999

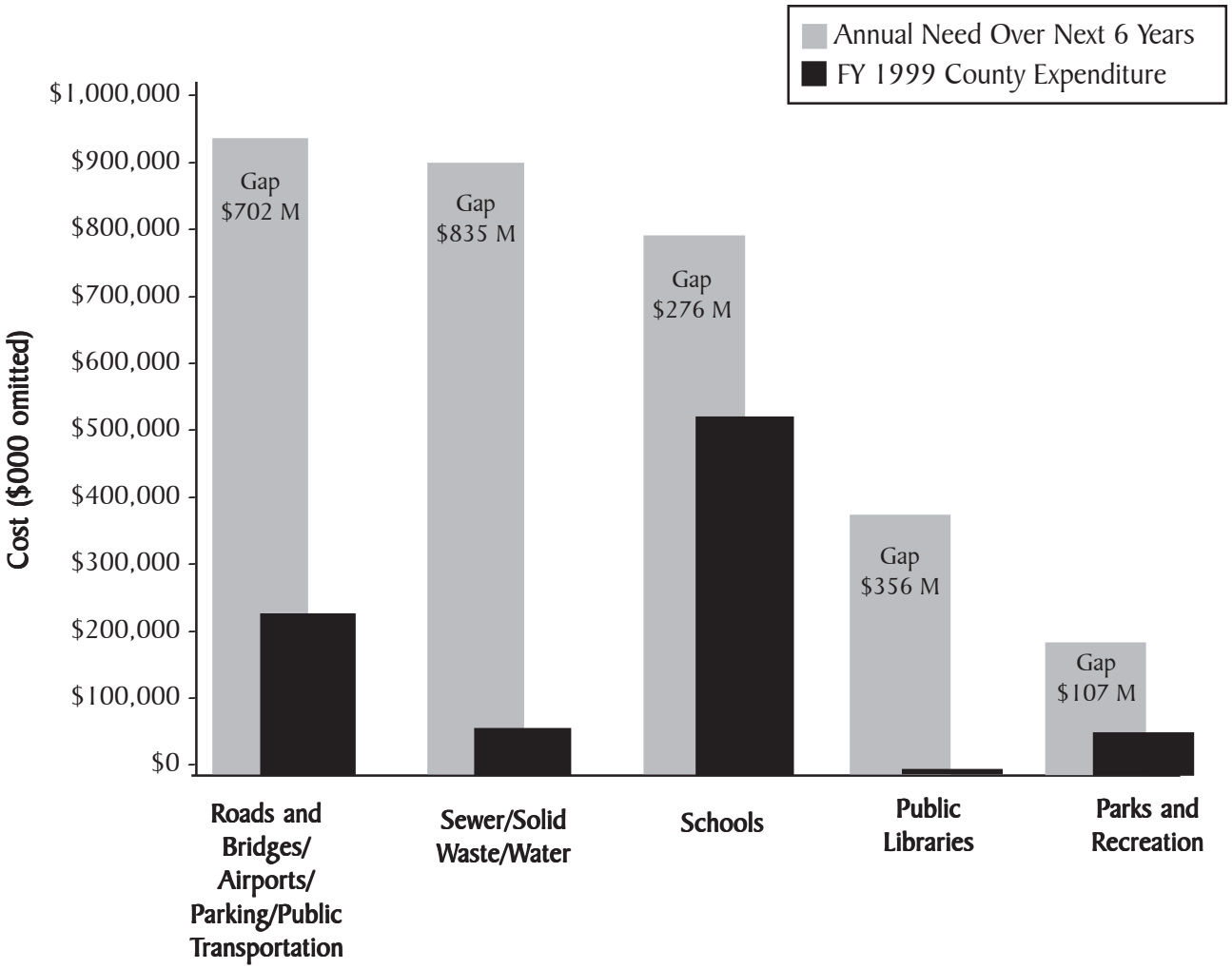
[24] Infrastructure types are those used by the Department of Legislative Services. Totals were created by combining infrastructure types from the survey.

Chart 7. County Expenditure and Short-term Annual Need Per Capita[25]



[25] Calvert County and Washington County's Funding Gap amounts were not included as they are $7,508 and $25,408 respectively. Negative funding gap most likely due to incomplete reporting of need.

Chart 8. County Annual Need vs. Expenditure by Infrastructure Type



B. FINANCIAL CAPACITY

Local governments institute a wide variety of approaches to financing infrastructure from the very sophisticated to the simple "don't fix it until it's broken" approach, which makes assessing a jurisdiction's ability to fund infrastructure difficult. It is the aim of this section to provide an indication of which county and municipal governments might be able meet their reported infrastructure needs. Assessing the financial capacity of local governments requires a review of the existing tax base, taxing level, ability to increase or levy taxes and fees, ability to issue bonds, and the availability of ever-diminishing State, federal, non-profit, and private funding sources.

As stated in the 1998 summary report, local governments also use diverse methods for budgeting, bookkeeping and tracking finances. The result is complexity in any assessment of local governments' ability to fund infrastructure and difficulty in comparing fiscal capacity between jurisdictions. In some jurisdictions, infrastructure projects are included in years 3-6 of CIPs, which are never moved forward to the currently budgeted years. Another example of the variation in local government infrastructure financing involves methods used for budgeting maintenance. Some jurisdictions include maintenance and renovation costs in an operating budget while others include them in their capital budget.

Thus, as in the 1998 survey, this report also includes several "indicators" that are standard measures of a jurisdiction's ability to fund infrastructure improvements. However, none of the indicators take into account the existence or level of maintenance programs used to preserve the life of infrastructure. Such programs may influence the cost to provide well-maintained and adequate infrastructure across the state. The indicators used to assess financial capacity include:

- Population Trends;
- Assessable Tax Base;
- Bond Ratings;
- Tax Effort Index;
- Tax Capacity Index;
- Debt Level to Property Tax Base; and
- Capital Expenditure.

Population: Growth And Decline

Population trends play an important role in determining infrastructure needs. Population growth affects demand for infrastructure and local governments' ability to supply infrastructure. A jurisdiction facing population decline may still have infrastructure needs but with fewer people from whom to collect fees and/or taxes. Likewise, jurisdictions with rapidly increasing populations may not be able to fund the infrastructure needed to meet growth demands, thereby affecting development patterns (see Map 2 for Population Growth and Gap per Capita Between short-term Budgeted Needs (FY2000) and Average Capital Expenditures(FY1997-1999). The map shows that Calvert and Worcester Counties are experiencing growth and have a large gap between budgeted needs and expenditures while Washington, Garrett and Baltimore Counties have a large gap but are not experiencing as much growth.

Tax Base And Ability To Raise Revenue

Local governments typically rely on three types of revenue sources: federal grants, state aid, and their own-source revenues.[27] Property taxes are one of the largest sources of local revenues and therefore one of the primary methods that local governments have to raise the revenue required to pay for infrastructure. Due to differences in assessable tax base, local governments' ability to raise property tax revenue varies significantly. Thus, several measures based on assessable tax base can be used as indicators of a local government's relative ability to fund infrastructure. These measures include the assessable tax base itself, the revenue generated by one cent of property tax, per capita tax base, and increases or decreases in tax base over time.

Revenue Generated by 1 Cent of Property Tax

This is a proxy measure for a jurisdiction's tax base and provides a relative indication of how readily a jurisdiction can raise revenue through the property tax. This measure can be compared to the estimated cost of needed infrastructure, as a hypothetical index for how high property taxes would have to be if all needed infrastructure was funded by property revenue.

The revenue generated by one-cent property tax varies widely in Maryland counties, from over $300 million in Montgomery County to just over $3 million in Somerset. Most counties generated less than $50 million in revenue from a one-cent property tax with the exception of Anne Arundel, Baltimore City, Baltimore County, Harford, Howard, Montgomery, and Prince George's. Municipalities may also raise revenue through property tax. To evaluate if local jurisdictions will be able to meet their reported annual short term budgeted needs it is useful to compare those costs to the amount of revenue generated by a one-cent property tax. Only nine counties would be able to fund their short-term budgeted needs through a one cent property tax – Anne Arundel, Caroline, Dorchester, Harford, Kent, Prince Georges, Somerset, Talbot, and Wicomico (Table 39). Six counties would be more than $500 in debt per capita: Frederick, Garrett, Queen Anne's, Montgomery, Washington and Calvert.

[27] Maryland Local Government: Revenues and State Aid, 1998

Table 38. Revenue Generated by a 1-Cent Property Tax Minus Short Term Budgeted Needs Per Capita

County	Assessable Base Per Capita	FY 2000 Short Term Budgeted Annual Need Per Capita	Revenue Generated Per Capita by a 1 Cent Property Tax	Revenue Generated Minus STB Need
Talbot	$36,838	$137	$368	**$231**
Kent	$28,059	$124	$281	**$157**
Caroline	$16,860	$26	$169	**$143**
Wicomico	$18,212	$67	$182	**$115**
Dorchester	$22,213	$139	$222	**$83**
Somerset	$12,673	$59	$127	**$68**
Harford	$23,003	$210	$230	**$20**
Prince George's	$21,866	$215	$219	**$4**
Anne Arundel	$28,801	$288	$288	**$0**
Carroll	$23,820	$258	$238	**($20)**
Cecil	$21,850	$275	$218	**($57)**
Charles	$26,830	$334	$268	**($66)**
Baltimore City	$12,764	$243	$128	**($115)**
Allegany	$17,396	$423	$174	**($249)**
Worcester	$53,521	$812	$535	**($277)**
Howard	$31,646	$665	$316	**($349)**
Baltimore County	$23,774	$660	$238	**($422)**
St. Mary's	$22,725	$720	$227	**($493)**
Frederick	$24,383	$787	$244	**($543)**
Garrett	$26,385	$909	$264	**($645)**
Queen Anne's	$28,819	$940	$288	**($652)**
Montgomery	$36,257	$1,040	$363	**($677)**
Calvert	$38,473	$7,694	$385	**($7,309)**
Washington	$20,144	$25,520	$201	**($25,319)**

Comparison Of Revenue Generated By A One Cent Property Tax to Short-Term Budgeted Annual Needs

The ratio of Short-Term Budgeted annual needs to revenue generated by a one cent property tax acts as an indicator of local governments' ability to fund their infrastructure needs. High infrastructure costs relative to total revenue indicate that it may be difficult for the jurisdiction to fund infrastructure projects. Counties with ratios higher than three include: Washington (126), Calvert (20), Saint Mary's (3.17), Frederick (3.23), Queen Anne's (3.26), and Garrett (3.44).

Comparison of Total Annual Revenue Per Capita to Short-Term Budgeted Annual Needs per Capita

Total annual revenue is the amount of income that a jurisdiction has in a given year. Only a small portion of this revenue is available for capital expenditures. High infrastructure costs relative to total revenue indicate that it will be difficult for the jurisdiction to fund their needs (see Table 39, Ratio of Short Term Budgeted Annual Need To Property Tax Revenue).

Tax Base Growth

Tax base growth or decline and per capita changes have a major affect on a local government's fiscal health. As the tax base per capita increases, a local government can more readily afford the costs incurred to provide infrastructure. When the property tax base declines, the cost of debt increases and revenues to pay for outstanding debt decreases, hindering a local government's ability to pay for new infrastructure or preserve existing facilities. The burden to service this debt usually falls to residents of these communities who are left behind. A community with less ability to generate revenue from property taxes may increase user fees, which will inherently impact lower and fixed income families disproportionately. These residents are also paying more while receiving insufficient or fewer infrastructure services. The community's condition is then exacerbated by the inability to attract economic development projects because of the low level of services and inadequate public facilities. This can lead to a downward spiral of decline.

According to the 1998 Infrastructure Survey, during fiscal years 1992-97 seven counties experienced growth of over 40% in their assessable tax base (Calvert, Carroll, Cecil, Charles, Frederick, Harford, and St. Mary's). However, during fiscal years 1994- 99 not one county experienced that much growth. Harford County had the highest percentage of assessable tax base growth with 32%. Only four other counties had growth over 25%: Charles (26%), Frederick (27%), Washington (28%), and St. Mary's (29%).

Seven counties had assessable tax base growth of less than 15%: Baltimore City (1%), Prince George's (11%), Talbot (11.5%), Allegany (13%), Baltimore (13%), Montgomery (14%), and Dorchester (14%). Unlike the previous infrastructure survey there is no strong relationship between assessable tax base growth and population growth, although almost all counties that experienced population growth twice that of the state had assessable tax base changes of over twenty percent, with the exception of Worcester, whose assessable tax base growth was 11% between 1994 and 1999.

Table 39. Ratio of Short Term Budgeted Annual Need to Property Tax Revenue

County	FY2000 Short Term Budgeted Annual Need Per Capita	Revenue Generated by a 1 Cent Property Tax	Revenue Generated by a 1 Cent Property Tax Per Capita	Assessable Tax Base 1994	Assessable Tax Base 1999	Tax Base Growth % change 1994-1999	Ratio STB Need per capita to Revenue Generated by One Cent Per Capita
Allegany	$423	$13,034,988	$174	$1,156,283,193	$1,303,498,831	12.73%	2.4
Anne Arundel	$288	$141,025,722	$288	$12,206,415,666	$14,102,572,168	15.53%	1.0
Baltimore City	$243	$83,112,942	$128	$8,232,309,754	$8,311,294,182	0.96%	1.9
Baltimore Co.	$660	$179,326,918	$238	$15,845,358,950	$17,932,691,805	13.17%	2.8
Calvert	$7,694	$28,686,872	$385	$2,295,232,835	$2,868,687,230	24.98%	20.0
Caroline	$26	$5,019,619	$169	$408,544,183	$501,961,888	22.87%	0.2
Carroll	$258	$35,943,582	$238	$2,883,361,955	$3,594,358,171	24.66%	1.1
Cecil	$275	$18,780,181	$218	$1,502,033,374	$1,878,018,086	25.03%	1.3
Charles	$334	$32,342,261	$268	$2,564,949,720	$3,234,226,090	26.09%	1.2
Dorchester	$139	$6,813,655	$222	$597,145,220	$681,365,480	14.10%	0.6
Frederick	$787	$47,614,223	$244	$3,743,998,887	$4,761,422,305	27.17%	3.2
Garrett	$909	$7,874,786	$264	$629,991,933	$787,478,598	25.00%	3.4
Harford	$210	$50,281,437	$230	$3,818,156,062	$5,028,143,676	31.69%	0.9
Howard	$665	$78,431,811	$316	$6,304,297,030	$7,843,181,070	24.41%	2.1
Kent	$124	$5,386,462	$281	$463,515,220	$538,646,213	16.21%	0.4
Montgomery	$1,040	$316,646,266	$363	$27,837,198,498	$31,664,626,551	13.75%	2.9
Prince George's	$215	$175,259,784	$219	$15,829,303,670	$17,525,978,395	10.72%	1.0
Queen Anne's	$940	$11,689,920	$288	$961,579,652	$1,168,992,009	21.57%	3.3
St. Mary's	$720	$19,591,297	$227	$1,520,213,216	$1,959,129,711	28.87%	3.2
Somerset	$59	$3,136,274	$127	$268,246,280	$313,627,415	16.92%	0.5
Talbot	$137	$12,455,788	$368	$1,116,720,966	$1,245,578,810	11.54%	0.4
Washington	$4,868	$26,575,033	$201	$2,082,077,377	$2,657,503,314	27.64%	?
Wicomico	$67	$15,415,435	$182	$1,329,581,209	$1,541,543,536	15.94%	0.4
Worcester	$812	$24,910,292	$535	$2,250,431,661	$2,491,029,177	10.69%	1.5

Table 40. Per CapitaTax Base Growth (*italic* – high % change)

County	Per Capita Assessable Tax Base 1994	Per Capita Assessable Tax Base 1999	1994-1999 Per Capita Assessable Tax Base Difference	% Change 1994-1999
Allegany	$15,650	$17,400	$1,740	11%
Anne Arundel	$26,760	$28,800	$2,040	8%
Baltimore City	$11,710	$12,760	$1,060	9%
Baltimore Co.	$22,260	$23,770	$1,510	7%
Calvert	$36,910	$38,470	$1,560	4%
Caroline	$14,230	$16,860	$2,640	19%
Carroll	$21,130	$23,820	$2,690	13%
Cecil	$19,500	$21,850	$2,350	12%
Charles	$23,470	$26,830	$3,360	14%
Dorchester	$19,630	$22,210	$2,590	13%
Frederick	$21,860	$24,380	$2,520	12%
Garrett	$21,450	$26,390	$4,940	***23%***
Harford	$18,900	$23,000	$4,100	***22%***
Howard	$29,600	$31,650	$2,050	7%
Kent	$24,800	$28,060	$3,260	13%
Montgomery	$34,680	$36,260	$1,580	5%
Prince George's	$20,720	$21,870	$1,150	6%
Queen Anne's	$26,660	$28,820	$2,160	8%
St. Mary's	$18,930	$22,730	$3,800	***20%***
Somerset	$11,310	$12,670	$1,370	12%
Talbot	$34,880	$36,840	$1,960	6%
Washington	$16,450	$20,140	$3,700	***22%***
Wicomico	$16,940	$18,210	$1,270	7%
Worcester	$57,680	$53,520	-$4,160	-7%

Per Capita Tax Base

The average per capita tax base in Maryland counties (June 30, 1999) increased slightly from $25,000 as reported in the 1998 survey to $26,000. Worcester and Calvert Counties skew the average as they are well above ($57,040 and $38,899 respectively). During the period of fiscal years 1995-1999, tax base per capita increased by 9.1 percent for Maryland counties. In contrast, fourteen counties have per capita tax bases below the state average (see Table 40, Per Capita Tax Base and Annual Per Capita STB Need).

Bonds And Bond Ratings

One way local governments fund capital infrastructure projects is by issuing bonds. The ease with which a local government can borrow money and the corresponding interest rate depends on the local government's fiscal health and ability to raise revenue to pay the interest and capital due on bonds. Interest rates also determine how much revenue the jurisdiction needs for interest payments. Higher interest rates leave less revenue available for additional capital spending on infrastructure. Local governments issue two types of bonds: general obligation bonds (G.O. Bonds), which are repaid from the jurisdiction's general tax revenue and other income; and revenue bonds, which are repaid from a dedicated predictable revenue source such as sewerage and water fees.

Several financial service companies rate jurisdiction's fiscal health. Potential bond purchasers use bond ratings to determine the relative safety of the bond issue, which will in turn affect the interest rate that a given jurisdiction will have to pay for a bond issue. Moody's and Standard & Poors are two firms that rate bonds for Maryland jurisdictions. In general, counties with the highest bond rating would most likely have the greatest ability to raise external funds to finance additional infrastructure improvements. Local governments with high ratings have passed the rigorous examination of bond rating agencies for credit worthiness. Higher bond ratings suggest that there is additional capacity to raise debt capital to fund infrastructure investments. However, if too much debt is issued to pay for infrastructure and other capital projects, a local government's bond rating could be lowered. In that scenario, the government would likely face higher borrowing costs and a reduced ability to issue new debt.

In FY 2000, only four of Maryland's 24 counties had Aaa ratings: Baltimore, Garrett, Howard, and Montgomery, all of which were also the only four counties in November 1997 with triple A ratings (see Table 41). Allegany County had the lowest rating (Baa2, A-) as it also did in November 1997. Somerset was not rated by Moody's or Standard & Poor's, and Caroline, Kent, Talbot and Worcester were not rated by Standard & Poor's.

Tax Capacity Index And Tax Effort Index

To measure and compare the taxing ability of Maryland's counties, the Department of Legislative Services calculates two indexes:

- Tax capacity index – compares local government's relative revenue raising ability; and
- Tax effort index – compares the extent to which local governments are taxing available resources.

These indexes are derived from revenue data of the twenty-three counties and Baltimore City. The indexes measure the relative revenue raising potential and tax base utilization by comparing local governments with one another, using state averages. The tax capacity index uses average statewide tax rates to compute the hypothetical tax revenue yield from each of several tax sources. This yield is computed on a per capita basis and indexed so that 100 is the state average. Thus, a county with a tax capacity index of greater than 100 has above average revenue raising potential, while an index value below 100 would suggest that county has below average revenue raising potential.

The tax effort index is calculated by dividing the actual county tax receipts by the calculated hypothetical tax revenue yield. The tax effort is also indexed so that the state average is 100. Thus, an index reading above 100 suggests that the county is currently taxing at an above average rate, while a rate below 100 suggests that the county taxing level is currently below the state average. The tax effort is not a measure of what the tax level should be, and therefore, it should not be used to judge whether local governments are taxing too much or too little. The tax effort merely provides an indicator of tax level based on a state average but does not take into account many other factors, which may also determine an appropriate tax effort.

Tax capacity and tax effort indexes are a reliable measure of relative trends in fiscal well-being. However, they have several weaknesses. The relative nature of these indexes must be kept in mind when interpreting results. For example, a county whose tax capacity index has declined over time is not necessarily losing revenue – its tax base may simply be growing at a slower rate than the statewide average. Also, because the indexes are based on per capita data, changes in population can also affect their movement over time. These indexes ignore local demand for services and acceptance of higher taxes and fees. In addition, they are not an indicator of an "ideal" revenue mix or level of taxation.

Table 41. County Tax Capacity and Tax Effort, Bond Ratings

County	Per Capita STB Need	Tax Capacity (1996-98 Averages)	Tax Effort (1996-98 Averages)	Bond Rating Moody's Nov. 1999	Bond Rating Standard & Poors Nov. 1999
Allegany	$423	64	104	Baa2	A-
Anne Arundel	$288	113	86	Aa1	AA+
Baltimore City	$243	53	164	A1	A
Baltimore Co	$660	98	94	Aaa	AAA
Calvert	$7,694	139	69	Aa	AA-
Caroline	$26	64	84	A3	Not Rated
Carroll	$258	93	84	Aa3	AA
Cecil	$275	85	82	A1	A+
Charles	$334	100	84	Aa3	AA
Dorchester	$139	81	89	A2	A
Frederick	$787	98	85	Aa2	AA
Garrett	$909	90	80	Aaa	AAA
Harford	$210	90	86	Aa2	AA
Howard	$665	129	86	Aaa	AAA
Kent	$124	101	81	A	Not Rated
Montgomery	$1,040	146	99	Aaa	AAA
Prince George's	$215	86	124	A1	AA-
Queen Anne's	$940	109	81	A1	A
Somerset	$59	47	90	Not Rated	Not Rated
St. Mary's	$720	82	84	A1	AA-
Talbot	$137	143	59	A1	Not Rated
Washington	$25,520	76	89	A1	A+
Wicomico	$67	78	92	A1	A+
Worcester	$812	215	77	Aa3	Not Rated

High Tax Capacity

Low Tax Capacity

High Tax Effort

Low Tax Effort

Summary of County Tax Capacity and Tax Effort Indexes

Tax Capacity – In the 1996-98 fiscal years, the five counties with better than average ability to generate tax revenue, as indicated by a tax capacity index greater than 120, were the same five with better than average ability in the 1993-95 fiscal years: **Worcester (215), Montgomery (146), Talbot (143), Calvert (139), and Howard (129)**. The six counties with below average tax capacities, as indicated by an index below 80, were the same counties with below average tax capacities in the 1993-96 fiscal years with the exception of Dorchester (81) and St. Mary's (82): **Somerset (47), Baltimore City (53), Allegany (64), Caroline (64), Washington (76), and Wicomico (78)**.

Tax Effort

In fiscal years 1996-98 there were three jurisdictions with a tax effort of greater than 100: **Allegany (104), Baltimore City (164) and Prince George's (124)**. In fiscal years 1993-95 there were only two - Baltimore City and Prince George's. In Fiscal years 1996-98, the counties that had a tax effort index of less than 80 were **Talbot (59), Calvert (69), and Worcester (77)**. In fiscal years 1993-95 there were an additional four counties which had low tax effort indexes (Garrett, Queen Anne's, Carroll and Kent).

Debt Levels

Another approach to evaluate a local government's ability to fund needed infrastructure is the comparison of debt levels with other fiscal measures. Two indicators frequently used are ratios of debt to tax base, and debt expenditure to revenue. These measures are more useful when considered in the context of trends such as the rate and direction that the tax base and revenues are changing over time.

Debt to Tax Base Ratio

In general, a higher debt to tax base ratio indicates that a jurisdiction has a relatively lower ability to fund additional infrastructure than other jurisdictions. This ratio varies considerably for local governments and must be considered along with additional underlying factors to make a judgment on the ability to fund infrastructure projects. For example, a relatively high debt/tax base ratio might not be considered negatively if other underlying fundamental factors such as a growing tax base ratio and population are considered. On the other hand, a low debt/tax base may not necessarily be a positive indication of a jurisdiction's ability to fund needed infrastructure if other dynamics (population and tax base) are negative. Jurisdictions with a relatively high debt/tax base ratio (over 5 percent) combined with little or no growth in the tax base might have a more difficult time financing additional infrastructure relative to another jurisdiction with a relatively high debt/tax base ratio but with strong growth in the tax base.

Table 42. Debt to Tax Base Ratio Trend 1995 – 1999

County	% Debt/Tax Base 1995	% Debt/Tax Base 1999	5 Year Trend[27]
Allegany	4.2	5.7	up
Anne Arundel	5.1	4.4	flat
Baltimore City	10.5	12.7	up
Baltimore Co.	5.3	4.8	flat
Calvert	2.4	2.4	flat
Caroline	3.8	4.7	flat
Carroll	4.7	5.8	up
Cecil	2.8	3.4	flat
Charles	3.9	3.5	flat
Dorchester	3.6	3.0	flat
Frederick	4.2	4.5	flat
Garrett	2.1	2.7	flat
Harford	3.2	4.9	up
Howard	9.2	8.7	flat
Kent	1.4	2.3	flat
Montgomery	9.1	9.2	flat
Prince George's	11.3	10.2	down
Queen Anne's	3.6	4.6	up
St. Mary's	5.9	5.2	flat
Somerset	3.7	5.3	up
Talbot	1.3	1.7	flat
Washington	5.9	5.4	flat
Wicomico	4.2	5.0	flat
Worcester	1.3	1.7	flat
Maryland	7.2	7.1	flat

Table 42 shows the debt to tax base ratio for counties and the trend in debt level relative to the property tax from 1995 to 1999. Maryland counties have debt/tax base ratios which range from a low of 1.7 in Talbot and Worcester to a high of 12.7 in Baltimore City. The State average is 7.1 down one percentage point since 1995. Six counties experienced a rise in the debt/tax ratio (Allegany, Baltimore City, Carroll, Harford, Queen Anne's, and Somerset) while only Prince George's county witnessed a decline in the ratio. The remaining eighteen counties recorded a relatively flat debt/tax ratio.

[27] An upward trend indicates that the debt level relative to the property tax base has increased by at least one percent; a flat trend indicates that the debt level relative to the property tax base fluctuated within one percent; a downward trend indicates a decline of at least one percent.

Debt Expenditure to Total Revenues Ratio

The Debt Expenditure to Total Revenues Ratio is the percentage of a jurisdiction's income that is being used to pay for debt. Generally jurisdictions with a higher ratio of debt expenditure to total revenue are relatively less able to fund additional infrastructure. However, a high debt service ratio is not necessarily indicative of a low ability to fund new infrastructure nor is a low debt service ratio an indication of a strong ability to fund new infrastructure. For example, jurisdictions that experienced past rapid population growth and needed to fund schools and other infrastructure services with borrowed money may now find themselves with a high debt service ratio. But, as the population continues to expand, with no need for new infrastructure, the debt service per capita will decline.

SUMMARY OF FINANCIAL CAPACITY TO FUND INFRASTRUCTURE

Therefore based on the previous indicators discussion, jurisdictions which may have difficulties funding future infrastructure needs include:

- Somerset
- Baltimore City
- Allegany
- Caroline
- Washington
- Wicomico

Counties which, based on the previous discussion of indictors may be more able to meet their future infrastructure needs include:

- Worcester
- Montgomery
- Talbot
- Calvert
- Howard

While some jurisdictions may be in a better position to fund their infrastructure needs, on average, reported infrastructure needs exceed local governments ability to pay for them. Failure to address issues directly relating to infrastructure could completely undermine Smart Growth investments made to date. Without adequate infrastructure, Maryland will delay and/or prohibit development in designated Priority Funding Areas, adding to the developement pressure in rural areas. This will affect Marylanders' overall quality of life and the state's economic competiveness. The economic vitality of Maryland rests on the physical condition of its infrastructure. The state of Maryland made a commitment to concentrate growth in existing communities. Now a concerted effort is required to maintain and to provide adequate infrastructure in those areas. Neglecting to do so will hinder economic growth and will lead to even larger infrastructure costs overtime.

APPENDICES

A. 2001 SURVEY METHODS – 1998 VERSUS 2001

The legislation which directs the Maryland Department of Planning to undertake an infrastructure needs survey states that "The Office of Planning shall complete surveys of municipal, county and State governments for infrastructure needs and shall maintain a list of needed projects that includes information relating to the financial capacity of the affected unit of government to undertake such projects." (Maryland Code, State Finance and Procurement Article Section 5-7B-09). While this section of the Code does not state how often the survey should be taken, MDP decided to update the Survey every two years but recommends that in the future the update be completed every three years. Similar to the first survey, the 2001 update was created after receiving comments from local planning directors and previous users of the survey. In response to their comments, the 2001 update was designed as an interactive web site. Local jurisdictions and State agencies were contacted in January 2001 and given instructions on how to complete the survey and a deadline for completion of May 31, 2001. Throughout the year MDP staff provided technical assistance to jurisdictions and a 100% response rate was achieved. Although all jurisdictions and State agencies completed the survey, the level of detail between and among responses varied. Variations are primarily due to staff capacity at the local and State level and whether or not the respondent had an existing capital improvements program, which could easily be referenced to complete the survey with the addition of long term projects.

Survey Design

In January 2001, each local government and State agency received a username and password with instructions on how to navigate the web site. Depending on the infrastructure type, a jurisdiction or State agency's infrastructure "needs" may only reflect information from one office or division and may not represent the capital infrastructure needs for the entire location or agency. MDP addressed this concern by sending survey correspondence to several persons in each jurisdiction and State agency but the potential for some projects not to be included in the survey still exists. The 2001 survey was designed to encourage information sharing. Using the web-based application allowed more than one user to view and supply information from a survey. Others outside the jurisdiction or agency could get permission to view information on projects being planned and the associated project information including cost and reason for the project.

The web format allows users to generate reports based on funding information and/or infrastructure type. Because the survey is web-based it is always available to the user so that projects can be updated on a regular basis and new projects can be added as they occur. This may reduce the time needed to update the survey in subsequent years. The web-based database can also be used for other purposes, as it is the one place where information regarding all capital projects is collected electronically. Another benefit of having all the information stored electronically is that it can be easily queried and sorted. Having a web-based survey also meant that the Department of Planning was able to provide direct support to the user through a notifications page and to resolve problems expeditiously.

The survey has two sections. The first section is a self-assessment in which local governments provide contact information and answers to sixteen questions related to infrastructure planning. The second section asks for infrastructure needs with three parts to each need: project information (description, location, budget type and status), funding information (source of funding), and reason for the project.

State Agency Review

MDP compared survey responses to State capital expenditures to verify the information provided. Additionally, the data was reviewed for double entries of the same project between and among jurisdictions as well as State agencies. Because the survey asked that project costs be reported in thousands, attention was paid to make sure this was done. MDP contacted jurisdictions and State agencies if data seemed problematic or if too many fields were left blank and provided them with the opportunity to fill gaps to make the survey results more robust. It may be beneficial in subsequent years to make more fields mandatory to ensure that all information is provided.

Feedback

Overall, few problems were encountered, feedback received was generally positive and on balance the web-based format was preferred. Many jurisdictions and State agencies stated that the survey served as a positive tool for coordinating infrastructure planning among various departments. A small number of jurisdictions did not have internet access but were able to take advantage of MDP's regional planners who met with those jurisdictions to complete the survey. In some cases when jurisdictions had relatively few projects they completed a hard copy of the survey and MDP staff entered the information. While improvements can still be made to the format to make data entry less time consuming, users reported finding the online survey easy to use and helpful in generating professional reports straight from the website. Modifications continue to be made to make data entry more compatible with existing capital improvement programs and capital budgets.

B. WHAT ARE WE LOOKING FOR? An Ideal Scenario

This section seeks to provide a standard against which we can compare the 2001 survey results. The quality of the information provided by local governments and State agencies is varied. Some respondents meticulously completed the survey, while others provided only minimal information. Additionally, with only two years between the surveys it is difficult to attribute changes in results to real changes in the infrastructure-planning environment. This section will discuss hypothetical findings to illustrate how the results would turn out if Maryland were equipped to meet the infrastructure needs of communities and growth demands within Priority Funding Areas by properly inventorying, maintaining and funding infrastructure projects.

The Self-Assessment Section

The most widely accepted tool for infrastructure planning is the Capital Improvements Program, which usually covers six years of capital improvements. CIPs are typically linked to the jurisdiction's long-range development plans and outline major projects, the time frame for completion, and the capital expenditures related to each project. CIPs also identify methods for financing the projects, and in some cases, estimate the fiscal impact on the jurisdiction's revenues and operating budget. CIPs are an essential tool in planning for long-term capital needs and supporting Smart Growth.

Ideal infrastructure planning requires a CIP, maintenance programs, and use of life cycle costing. The percent of jurisdictions responding yes to these questions in the self-assessment section of the survey should be high.

Budget Type

Hypothetically, the survey should report a balance between Short Term Budgeted projects and Long-Range projects, indicating an awareness of both current and future needs.

Reason

CIPs should include projects needed to carry out a jurisdiction's comprehensive plan with projects moving through the six-year cycle as planned to avoid additional costs that may result from deferment. Ideally, none of the projects should be needed to meet existing unmet demand, as all projects would be funded and completed in a timely manner. Similarly, projects needed for growth should be located in growth areas.

Funding

Jurisdictions should employ fiscal plans so that sufficient funds can be drawn from or debt issued that does not over-burden the tax payers or infrastructure users to pay for capital projects. Such fiscal plans could involve taxing at an effort commensurate with tax capacity or setting up investment funds to pay for the maintenance of infrastructure. Ideally, no jurisdictions would have exorbitant gaps between their short-term budgeted needs and their capital expenditures. This would also mean that jurisdictions would have funding sources identified for 100 percent of the cost of short-term projects and a majority of the long-term projects.

Infrastructure Type

Infrastructure types should include a healthy range representing the needs of the communities. There should not be an under-funding of one infrastructure type from year to year, nor should one type of infrastructure receive more than its "fair share" of funding from one year to the next. Infrastructure expenditures should reflect the priorities of the State of Maryland and of the individual jurisdictions as explained in their comprehensive plans.

It is important to set a goal of how Maryland should be equipped to foster Smart Growth based on the sound practice of infrastructure planning and financing. Infrastructure is not always visible and therefore easily overlooked for higher profile endeavors. Poorly maintained infrastructure is not only expensive to repair- it can put public and environmental health at risk from such things as failing bridges which may collapse, sanitary sewer overflows contaminating the water supply, and development with no preservation of open space. Maryland needs to take a serious look at the condition of its infrastructure and future capacity needs in order to maintain the quality of life Marylanders expect as the population increases and development pressures continue.

C. INFRASTRUCTURE

Importance of Infrastructure

Infrastructure systems are integral to the social, political, and economic fabric of life. They affect the quality of transportation, condition of buildings, availability of open space, school capacity, residents' proximity to public libraries, the cleanliness of drinking water, access to electrical power and communications, and the efficacy and safety of waste management. Infrastructure affects the shape and patterns of growth as well as the potential for redevelopment. The maintenance and improvement of infrastructure systems may not receive consistent attention because infrastructure is so pervasive, complex, and often invisible. However, the public expects infrastructure facilities to bring reliable power, clean water and other public services. Over time, as people commute further, use more water, and dispose of greater quantities of waste these expectations will increase. Today, taxpayers have higher standards for infrastructure to uphold as they are increasingly affected by insufficient systems – congestion, bridge collapses, water main breaks, halted development, and health risks related to the quality of infrastructure – which are also impediments to economic growth and to a positive quality of life.

A major premise behind the Smart Growth goal to direct growth to designated areas is to save taxpayer dollars by using existing infrastructure rather than building new infrastructure to support sprawl development. In a statewide infrastructure study (May 1997), South Carolina recognized the cost savings that exist by using infrastructure with excess capacity. South Carolina addressed reducing costs related to infrastructure construction by attempting to alter development patterns to achieve savings by using existing infrastructure. State and local governments make a tremendous investment in infrastructure and need to maintain those valuable resources to capitalize on their investment over time. Maryland has Smart Growth laws but may not be benefiting from the potential cost savings as existing infrastructure requires rehabilitation and renovation and in some cases needs additional capacity to support areas planned for growth.

Infrastructure Maintenance

Infrastructure is at the core of economic development and community vitality, however most people do not even notice its importance until there is a failure. The result is a steady deterioration in the physical condition and quality of service. Consequently, when infrastructure failures do arise, the cost for replacement or repair is usually exponentially more than if a thorough, consistent plan of maintenance had been fully funded and implemented. The cost to rebuild a street is fifteen times greater than the cost of maintaining it properly in the first place.[28]

Nationally there has been an annual shortfall between capital spending and infrastructure needs. The American Society of Civil Engineers recently graded America's infrastructure and gave it a grade point average of "D+" with total investment needs for twelve infrastructure types (roads, bridges, transit, aviation, schools, drinking water, wastewater, dams, solid waste, hazardous waste, navigable waterways, and energy) equaling $1.3 trillion. In an article for the Baltimore Sun, Jules Witcover describes it as a "physical breakdown" pointing the finger at one

[28] Governing magazine, February 2002

major culprit -"neglect".[29] Maryland is neglecting to maintain and provide quality infrastructure with adequate capacity for present and future use.

Maryland had a number of recent episodes of failed infrastructure, many of which made headlines in area newspapers. One of the leading ramifications of these failures is the risk to public health, not withstanding citizen's inconvenience from the resulting traffic jams, delayed flights and the increased travel time to find a public library or recreation space. Infrastructure is the cornerstone of daily life and inextricably tied to economic activity.[30] Yet infrastructure maintenance is frequently passed over for a more politically advantageous or "sexy" project. A consequence is often infrastructure disasters requiring expenditures far higher than the cost of maintenance. Another consequence of inadequate public facilities includes delayed development. A developer will most likely find a location where a project can be implemented immediately rather than expending the carrying costs to wait for adequate facilities. And, while developers may contribute to the costs of installing new infrastructure, it is unlikely that they will contribute to maintenance so funding must be secured elsewhere to preserve the life of the infrastructure.

There are tremendous cost-savings to be had for those who follow a maintenance program and who use evaluation methods, such as life cycle costing, so that the full cost of infrastructure, including maintenance, is considered before it is even procured. Life cycle costing (LCC) evaluates all significant costs of the infrastructure over its life – concept/development, design, construction, operation, maintenance, removal/demolition – not just the initial capital costs. For example, Denver used LCC to select road materials.[31] The City of Denver analyzed whether to use concrete or asphalt pavement and found that although concrete pavement had a higher initial cost the annual maintenance of concrete in Denver was less than it would be for asphalt taking into account many variables such as weather, volume of bus and truck traffic, and lane widths. Denver chose concrete pavement because it could decrease the City's cost of street maintenance overtime. Furthermore, the federal government requires LCC to be used to justify funding for any organization depending on federal funds for highway infrastructure and transportation facilities as stated in the Intermodal Surface Transportation Efficiency (ISTEA) Act of 1991.

Governing Magazine emphasized the importance of infrastructure maintenance through their "Government Performance Project"(GPP).[32] One of the components of the project was to examine county governments' management of their capital assets. The report highlighted the predicament counties are facing with decreases in state and federal government funding for many programs thereby increasing the competition for property-tax dollars among the various components of county government. Some counties have addressed the shortfall through innovative supplemental funding sources while others seem to be struggling. The GPP cites three crucial factors in capital management at the county level: "maintenance, maintenance and maintenance." This requires sufficient funds for "renovation and rehabilitation" of facilities. The point that needs to be stressed in regard to deferred maintenance is that deferring maintenance on infrastructure results in long

[29] Baltimore Sun, Friday, August 3, 2001 "Infrastructure short-changed"
[30] Fed reserve articles, 1990 and annual report of the council on environmental quality, 1993
[31] Ofori-Darko, Francis. Life Cycle Costing of Civil Engineering Projects: Methods and Some North American Experiences. July 11, 1997. pp. 17.
[32] Governing magazine, February 2002

run costs that are often prohibitively expensive. Additionally because funds are limited, local governments and counties in particular, need to have a sound inventory of their infrastructure with corresponding maintenance programs. Subsequently, jurisdictions need to link their growth plan to a capital improvements program by incorporating the fiscal impacts of implementing the comprehensive plan so that they spend limited funds effectively and purposefully.

Infrastructure Planning

By including a mandate to survey infrastructure needs across the State, the General Assembly recognized that if Smart Growth is to sustain itself, it will be necessary for communities to have adequate and well-maintained infrastructure. Without such infrastructure, Maryland's communities will find it difficult to accommodate projected growth in Priority Funding Areas or to provide the level of services needed to meet the needs of residents and employers in existing communities. MDP's Infill and Redevelopment Models and Guidelines cites the lack of funding for infrastructure maintenance and renovation as a major obstacle to infill and redevelopment. Infill is a viable long-term method of reducing pressures for sprawl development. It capitalizes on existing infrastructure and minimizes the need for costly new infrastructure. Components of a successful infill strategy include targeting infrastructure renovation and maintenance projects to areas where infill is desired (Models and Guidelines publication 23).

Frequently, residents attribute congestion and facility inadequacy to a "lack of planning" or "poor planning," however in most situations, the planning has occurred but the ability to target facility investment is hampered and/or the maintenance of infrastructure systems has been deferred to the point that the cost of bringing the infrastructure up to expected standards is out of reach. Poorly maintained and inadequate infrastructure may push development to areas where adequate infrastructure exists or to areas that will require the construction of facilities thereby escalating the infrastructure funding "needed" for a jurisdiction. A number of local governments have adopted Adequate Public Facility Ordinances that require sufficient schools, roads and other facilities to be available prior to new development. APFOs are designed to curtail development where public facilities are inadequate to support it, and to delay development in planned growth areas until adequate service levels are in place or reasonably assured (Models and Guidelines publication 14). However, the areas a jurisdiction designates for growth are often the very areas with inadequate capacity of public facilities, while excess capacity is often located in areas where new growth is neither planned for nor occurring as rapidly. Any widespread inability to meet present and future infrastructure needs in designated growth areas poses a major obstacle to Smart Growth goals.

D. GASB 34

The Governmental Accounting Standards Board is a private, nonprofit organization formed in 1984 to develop and improve accounting and financial reporting standards for state and local governments. GASB is responsible for setting generally accepted accounting principles for both state and local governments. Statement 34 establishes new financial reporting requirements for state and local governments requiring additional information in their annual reports, including new government wide financial statements to use accrual accounting for all government activities.[33] All current and long term assets and liabilities such as infrastructure and general obligation debt will be reported so government officials can demonstrate their long-term stewardship of public resources.

GASB 34 recognizes the link between proper maintenance and sound fiscal accountability. There are significant cost savings to continual preservation efforts and the resulting cost savings can be used elsewhere. GASB 34's infrastructure reporting requirements are aimed at providing more comprehensive cost information upon which to make informed judgments about the ability of governments to repay their debts and support their service obligations. The investment companies want to ensure their investments are properly cared for. Using the infrastructure survey to keep an up to date inventory of eligible infrastructure assets can partly fulfill GASB 34's Modified Approach requirements.[34] As stated in the PricewaterhouseCoopers report, GASB 34 has the potential to focus greater attention by legislators, budget analysts, infrastructure agency managers, and the investment community on infrastructure maintenance and preservation. Governments may become more accountable for the condition of their roads, bridges, and other major types of infrastructure to taxpayers, businesses, rating agencies, creditors and investors.

[33] PricewaterhouseCoopers: "Understanding GASB 34's Infrastructure Reporting Requirements", October 1999.

[34] The Modified Approach allows governments to record the current costs of preserving eligible infrastructure in lieu of depreciation.

E. INFRASTRUCTURE TYPES WITH THE HIGHEST REPORTED NEED: What Is Their Relation To Smart Growth?

The economic vitality of Maryland rests on the physical condition of its infrastructure. The State of Maryland made a commitment to concentrate growth in existing communities. Now a concerted effort is required to maintain and to provide adequate infrastructure in those areas. Neglecting to do so will hinder economic growth and will lead to even larger infrastructure costs overtime. Currently, infrastructure needs exceed local governments ability to pay for them and if this gap is not addressed, that need will persist and increase resulting in disincentives for businesses to locate and for residents to reside in Maryland.

Roads and Bridges – One way to reduce costs would be to maintain existing roads and bridges infrastructure while promoting Smart Growth development. Population and employment growth inherently increases the demand for roads and bridges. Inflation increases all infrastructure costs, which during recent years in Maryland attributed to an increase of annual costs between two and three percent. Both of these facts increase the cost of providing roads and bridges. Reducing demand for roads and bridges would curb costs. Conventional suburban development - low density, single use development - has been and still is the dominant land use pattern in the State. This type of land development increases the distances between origins and destinations, creating an average of 11 household automobile trips per day. Additionally, more roads and bridges are needed for this type of land use. Cost reductions can also be found through increases in air quality by reducing vehicle miles traveled and thereby lessening the need for other more costly techniques to meet the Environmental Protection Agency's Clean Air Standards.

Schools – The greatest savings can be achieved through Smart Growth techniques of maximizing the use of infrastructure; making better use of existing school capacity, building new schools where roads and sewers and water systems are already in place, sharing space with compatible services (library and recreation facilities) and extending the life of existing school buildings. The cost of school construction continues to steadily rise over time. As the built environment expands, the availability of desirable school sites shrinks and demand drives the land values upward. In 1998 the Public School Construction Program estimated construction costs at $92 per square foot. In 2002, the state estimate is $134 per square foot. A 50,000 square foot elementary school costs $2 million more today than just five years ago.

Public Libraries – Smart Growth strives to improve the quality of life for all Marylanders. Public library systems are major cultural institutions, which serve the public in many ways by facilitating the sharing of information. One of the most recent uses for public libraries involves providing internet access to the public. Having internet access in libraries helps to bridge the digital divide across households of varying economic means. Counties are the primary funding source for public libraries and provide a valuable public service to community members through the provision of many services while functioning as a center for community gatherings.

Parks and Recreation – Parks and recreation spaces are critical to the quality of life in communities and often make higher residential densities more attractive while providing positive environmental effects. However, parks and recreation systems are affected by increases in both the cost of real estate and construction. As real estate becomes more expensive, the cost to purchase land for public open space often becomes prohibitive for local jurisdictions. Park and recreation space exactions and land set asides from development, transfers the public costs to acquire land to the private market. This may decrease a developer's ability to provide affordable housing or to lease commercial space at low rents. This is why a major stated purpose of Program Open Space is to provide funds for acquisition of land in advance of planned development and increased land values.

Water Supply – All neighborhoods require clean water systems but as costs increase to meet water quality and security regulations, creative financing and innovative rate structuring will be needed to keep the costs affordable.[35] Water supply systems vary according to the number and purposes of water uses required in a region. The system includes water source, transmission mains, treatment facilities, distribution systems, and service connectors.

Sanitary Sewerage – Meeting the needs associated with sanitary sewer systems is strongly connected to furthering the goals of Smart Growth. For example, addressing sanitary sewer overflows has immediate benefits for growth by reducing the entry of rainfall into the system and allowing more capacity to convey sewage, thereby accommodating projected growth without expanding or building new facilities. However, costs associated with sanitary sewer systems have increased as efforts are made to reduce the amount of nutrients discharged through secondary (removing organic matter through biological processes) and tertiary (eliminating pollutants not removed by conventional biological methods) treatments to protect the Chesapeake Bay and its tributaries. sanitary sewer systems remove wastewater from the point of origin and transfer it to a point where it can be treated. The waste is treated and safely released into the nearest body of water or the solid waste can be land-applied or incinerated. Rehab and renovation costs have also increased due to aging systems as well as improper maintenance issues such as leaks from cracks in the pipes, which lead to inflow and infiltration problems.

[35] Project Infrastructure Development Handbook, ULI, 1989 pp. 7

F. INFRASTRUCTURE PLANNING IN MARYLAND

The State plays a major role in providing funds to local governments for many infrastructure types. With this funding assistance, the General Assembly requires planning to track infrastructure needs and to ensure efficient use of State resources. To be eligible for State funds, local governments must prepare and update plans for schools, and park and recreation facilities. In addition, the Maryland Department of Transportation is required to prepare highway needs inventories and plans for transportation projects and counties are required to have water and sewer plans.

County Water and Sewer Plans

A county must have a water and sewer plan covering at least a 10 year period that is updated every three years. The law mandates that the plans provide for the orderly expansion and extension of systems in a manner consistent with all county comprehensive plans. The plans project sewer and water facility demands based on population, planning and zoning information. Each county and Baltimore City is required to have an up to date water and sewer plan. Ensuring that these plans are complete is essential to the implementation of Smart Growth so that communities can accommodate growth and properly service existing residents. Water and sewer planning should ensure that the sizing and staging of facilities are adequate to prevent discharge of any inadequately treated sewage or other liquid waste into any waters. Recent review of the County Water and Sewer Plans have shown that many of the plans are out of date and out of compliance. Bringing these plans up to date would result in greater accuracy in reporting water and sewer facility needs.

Schools

The Interagency Committee on Public School Construction's (IAC) regulations and guidelines require counties to develop and annually update an Educational Facilities Master Plan (EFMP). This plan must be based on population and enrollment projections and be consistent with the county's adopted comprehensive plan. The EFMP includes a facility needs analysis for new schools, additions, renovation, and systemic projects (roof, HVAC, plumbing) and replacements. The IAC has adopted capacity and space guidelines indicating what facilities are eligible for State funding and approves plans for one fiscal year at a time.

Park and Recreation Facilities

Created by legislation in 1969, Program Open Space (POS) dedicates real estate transfer tax revenues for land preservation and development of outdoor recreation facilities. Maryland's Program Open Space law requires each county and Baltimore City to prepare a Land Preservation and Recreation Plan (LPRP) and to update the plan every five years. This plan identifies the jurisdiction's open space and recreation land and facility needs based on population projections and demand analysis of recreation activities. The plan, reviewed and approved by the Department of Natural Resources and the Maryland Department of Planning, qualifies counties to receive a local share of Program Open Space funds from the State.

Transportation Facilities

The Maryland Department of Transportation (MDOT) prepares and annually updates the Consolidated Transportation Program (CTP). The CTP, prepared in consultation with local governments, identifies transportation needs in each county that are planned for State funding during the next six years. In addition to the CTP, MDOT develops a Highway Needs Inventory, which identifies major capital construction projects necessary to serve existing and projected population and economic activity in the State as well as to correct safety and structural problems. The Highway Needs Inventory is updated annually and reflects needs based on technical analysis and adopted local and regional transportation plans. In addition, counties and municipalities in Major Metropolitan Areas participate in their Metropolitan Planning Organizations, which prepare long range plans for needed transportation facilities. Historically, the focus of these regional plans has been highway facilities; however there is increased recent attention to bicycle, pedestrian and public transportation facilities.

G. ANSWERS TO SELF ASSESSMENT SECTION

		NA	No	Yes	No Answer	% No	% Yes	% NA	Percent Average
Do you have a Capital Improvement Program or a similar program for the planning and funding of capital investments?	**Jurisdictions**		77	100	5	42%	55%		
	Municipalities		75	79	4	47%	50%		
	Counties		2	21	1	8%	88%		
Does your jurisidication have inventories of existing infrastructure and/or a facilities master plan?	**Jurisdictions**		60	83	39	33%	46%	21%	
	Municipalities		59	66	33	32%	36%	18%	
	Counties		1	17	6	1%	9%	3%	
Have you been able to adequately maintain your jurisdiction's existing infrastructure?	**Jurisdictions**		118	60	4	65%	33%	2%	
	Municipalities		101	54	3	64%	34%	2%	
	Counties		17	6	1	71%	25%	4%	
Have you been able to provide adequate infrastructure for existing residents and businesses?	**Jurisdictions**		96	80	6	53%	44%	3%	
	Municipalities		82	71	5	52%	45%	3%	
	Counties		14	9	1	58%	38%	4%	
Is your ability to fund infrastructure a limiting factor in your ability to direct new growth to appropriate areas?	**Jurisdictions**		55	120	7	30%	66%	4%	
	Municipalities		48	105	5	30%	66%	3%	
	Counties		7	15	2	29%	63%	8%	
Does your jurisdiction have an estimate for the fiscal impacts associated with implementing your comprehensive plan?	**Jurisdictions**	14	89	33	46	49%	18%	25%	
	Municipalities	13	79	25	41	50%	16%	26%	
	Counties	1	10	8	5	42%	33%	21%	
Does your jurisdiction use any predictive tools such as life cycle costing or pavement management programs for estimating the timing and/or cost of rehabilitation projects?	**Jurisdictions**		102	37	43	56%	20%	24%	
	Municipalities		96	24	38	61%	15%	24%	
	Counties		6	13	5	25%	54%	21%	

		NA	No	Yes	No Answer	% No	% Yes	% NA	Percent Average
Does your jurisdiction have any system preservation programs that receive an annual level of funding for renovation and replacement projects?	**Jurisdictions**		93	47	42	51%	26%	23%	
	Municipalities		87	36	35	55%	23%	22%	
	Counties		6	11	7	25%	46%	29%	
Approximately what percentage of the existing infrastructure for which you are responsible will require replacement or reconstruction within the next 6 years to remain viable?	**Jurisdictions**								30.85
	Municipalities								31.36
	Counties								21
Might some capital projects needed by your jurisdiction have been unnecessary if you had been able to adequately fund timely maintenance and renovation of existing facilities?	**Jurisdictions**		63	56	63	35%	31%	35%	
	Municipalities		56	52	50	35%	33%	32%	
	Counties		7	4	13	29%	17%	54%	
What percent of projects would be unnecessary?	**Jurisdictions**								38.94
	Municipalities								39.65
	Counties								2
Do you use population or employment forecasts to anticipate long-range needs?	**Jurisdictions**		62	76	44	34%	42%	24%	
	Municipalities		59	61	38	37%	39%	24%	
	Counties		3	15	6	13%	63%	25%	
Did you coordinate your response with your municipalities/county?	**Jurisdictions**		111	64	7	61%	35%	4%	
	Municipalities		98	54	6	62%	34%	4%	
	Counties		13	10	1	54%	42%	4%	

H. LOCAL GOVERNMENT SHORT-TERM BUDGETED COST BY INFRASTRUCTURE TYPE ($000 OMITTED)

Infrastructure Type	State Agencies	Counties	Municipalities
Airports	$1,619,360	$149,810	$263,890
Community Colleges	$86,390	$239,670	
Cultural Facilities	$40,840	$37,070	$29,290
Dams	$53,600		$42
Detention Facilities	$2,825,340	$224,720	
Economic Development	$104,690	$1,472,620	$61,400
Environmental Mitigation	$1,240	$1,830	
Fire Facilities		$101,720	$19,220
Government Buildings	$224,220	$870,760	$73,800
Health and Human Services	$397,960	$29,260	$8,520
Housing		$1,420	$1,820
Judicial Courts	$100,830	$33,400	$50
Open Space		$99,640	$730
Other		$60	
Parking Facilities	$1,010	$248,540	$53,710
Parks and Recreation	$282,690	$1,031,630	$73,810
Police Facilities	$34,280	$149,400	$28,680
Ports	$575,610	$13,040	$14,940
Public Libraries		$2,166,850	$4,540
Public Transportation	$6,395,460	$110,960	$19,720
Rail	$37,060	$6,280	
Roads and Bridges	$5,283,710	$5,090,190	$437,203
Sanitary Sewer	$4,210	$3,697,660	$231,980
Schools	$1,805,020	$4,749,850	$47,670
Shore Erosion Control	$1,880		$760
Sidewalks	$3,080	$142,670	$16,600
Solid Waste Disposal	$62,600	$289,050	$24,390
Stormwater and Drainage		$284,490	$22,790
Street Lights and Street Scaping		$44,720	$18,570
Telecommunications	$16,490	$16,200	$100
Water Supply	$29,110	$1,360,910	$155,310

I. MUNICIPALITIES ISSUING BONDS

Issuer	Bond	Description Rating
ANNAPOLIS (CITY OF) MD	General Obligation	Aa2
BEL AIR (CITY OF) MD	General Obligation	A3
BOWIE (CITY OF) MD	General Obligation	Aa2
CAMBRIDGE (CITY OF) MD	General Obligation	A3
CHEVERLY (CITY OF) MD	General Obligation	Baa1
CUMBERLAND (CITY OF) MD	General Obligation	Baa2
EASTON (TOWN OF) MD	General Obligation Public Facilities	A1
FREDERICK (CITY OF) MD	General Obligation Airport Improvements and Refunding	Aa3
GREENBELT (CITY OF) MD	General Obligation	A2
HAGERSTOWN (CITY OF) MD	General Obligation	A3
OCEAN CITY (CITY OF) MD	General Obligation Municipal Purpose	A2
ROCKVILLE (CITY OF) MD	General Obligation	Aa1
SALISBURY (CITY OF) MD	General Obligation	A1
WESTMINSTER (CITY OF) MD	General Obligation	A2

J. RATIO STB ANNUAL NEED TO REVENUE GENERATED BY A 1 CENT PROPERTY TAX

County	FY2000 Short Term Budgeted Annual Need Per Capita	1999 Assessable Property Tax Base Per Capita	Revenue Generated by a 1 Cent Property Tax Per Capita	Per Capita Ratio STB Annual Need to Revenue Generated by a 1 Cent Property Tax
Allegany	$423	$17,396	$174	2
Anne Arundel	$288	$28,801	$288	1
Baltimore City	$243	$12,764	$128	2
Baltimore Co.	$660	$23,774	$238	3
Calvert	$7,694	$38,473	$385	20
Caroline	$26	$16,860	$169	0
Carroll	$258	$23,820	$238	1
Cecil	$275	$21,850	$218	1
Charles	$334	$26,830	$268	1
Dorchester	$139	$22,213	$222	1
Frederick	$787	$24,383	$244	3
Garrett	$909	$26,385	$264	3
Harford	$210	$23,003	$230	1
Howard	$665	$31,646	$316	2
Kent	$124	$28,059	$281	0
Montgomery	$1,040	$36,257	$363	3
Prince George's	$215	$21,866	$219	1
Queen Anne's	$940	$28,819	$288	3
St. Mary's	$720	$22,725	$227	3
Somerset	$59	$12,673	$127	0
Talbot	$137	$36,838	$368	0
Washington	$25,520	$20,144	$201	127
Wicomico	$67	$18,212	$182	0
Worcester	$812	$53,521	$535	2

K. STATE AGENCIES

Baltimore City Community College
Bowie State University
Canal Place Preservation and Development Authority
Maryland Department of Business and Economic Development
Maryland Department of Budget and Management
Maryland Department of General Services
Maryland Department of Housing and Community Development
Maryland Department of Health and Mental Hygiene
Maryland Department of Human Resources
Maryland Department of Juvenile Justice
Maryland Department of Labor, Licensing, and Regulations
Maryland Military Department
Maryland Department of Natural Resources
Maryland Department of Aging
Maryland Department Public Safety and Correctional Services
Judiciary of Maryland
Maryland Department of Agriculture
Maryland Department of the Environment
Maryland Department of Transportation
Maryland Energy Administration
Maryland Environmental Service
Maryland Higher Education Commission
Maryland Insurance Administration
Maryland Public Broadcasting Commission
Maryland Stadium Authority
Maryland School for the Deaf
Maryland State Department of Education
Maryland State Lottery Agency
Maryland State Police
Morgan State University
Maryland Veterans Commission
Office of Crime Control and Prevention
Office for Children, Youth and Families
Office on Individuals with Disabilities
Office on Minority Affairs
St. Mary's College of Maryland
University of Maryland System
University of Maryland Medical System